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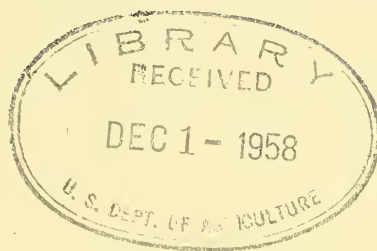
*Using...*

# RESEARCH in EXTENSION

*Summary of an*  
**EXTENSION RESEARCH WORKSHOP**

**May 6-10, 1957**

**Washington, D. C.**

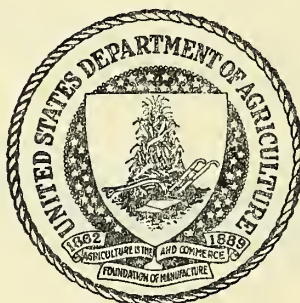


**Division of Extension Research and Training**

**Federal Extension Service**

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## EXTENSION'S CHALLENGE

Had a modern Rip Van Winkle begun his slumbers about the time World War II began and awakened in 1957 he would not have believed what he saw. He would have awakened to a literally new farm world. A great transformation took place in the space of a little over a decade. We have experienced a technological explosion.

Why did this marvelous change occur? It was made possible by the cumulated technological knowledge together with other scientific developments in agricultural production that took place during the war and immediate postwar period. I think this change was triggered by patriotic and economic motivations that impelled the American farmer to produce at maximum capacity.

I mention the "explosion" in American agriculture because I think we can draw an analogy from it. The analogy has to do with research in Extension and the application of the results in the Cooperative Extension Service. The likenesses between modern scientific agriculture in the pre-World War II period and extension work today are of two kinds.

First, we have a great backlog of know-how available to apply in Extension. This fund of knowledge from research in the behavioral sciences, like agricultural technology, was greatly increased during the war and postwar period. Its widespread use throughout the Extension Service, I feel confident, could result in two to four times the total educational results that are achieved today. Second, we have the "plant," namely the cooperative extension service staff, to produce the results that are envisioned.

What then is needed to light the fuse or to serve as the catalyst in Extension? In my view, leaders of research in the States together with leaders of training have this opportunity - this challenge.

Why is this so? It is so because through the efforts of extension research persons to try out and experiment with applications of research from other areas we can develop the "extension technology." I use "extension technology" to mean extension work done in accordance with principles and methods derived from basic research in the behavioral sciences. It means science applied to the extension job. As applications are learned through extension research their widespread use can result when they are made a part of the day-to-day work of extension staff members.

I do not minimize the size of the job to be done, nor am I forgetting that change - particularly educational change - is slow. However, I firmly believe in the potential for what I have chosen to call "extension technology." Let's accept the challenge of the potential! I'm confident it can be done. The question is, "How quickly can it be done?"

C. M. Ferguson, Administrator  
Federal Extension Service



Extension Research Workshop  
Federal Extension Service  
U. S. Department of Agriculture

May 6-10, 1957

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## THE WORKSHOP AND THE REPORT

J. L. Matthews

Mr. Ferguson's welcome set the stage for the third national extension research workshop held by the Division of Extension Research and Training here in Washington. He pointed out the importance of extension research in keeping the Cooperative Extension Service up to date and in improving its programs and personnel. He expressed the belief that an "explosion" could occur if all the applicable knowledge about how people behave and why they behave as they do were to be quickly put to use by extension workers. He said that the purpose of extension research is to learn how new educational methods and new knowledge about human behavior can be applied in the day-to-day operations of the Extension Service.

It was the purpose of the workshop to help the participants prepare to meet the challenge Mr. Ferguson described for the Extension Service and for those engaged in extension research. Extension workers need the help of research persons in making use of the new knowledge from any discipline that has implications for Extension. Mr. Ferguson stated that it is fully as important for the extension worker to be competent in the educational process as in agricultural or home economics subject matter.

Two major emphases of the workshop were in line with these views. The first had to do with the ways, methods and organizational arrangements for a State program of research in Extension. The second dealt with the problems and methods for getting the findings from applicable research used by extension staff members. A discussion of the action research idea contributed to both of these emphases.

Several program items were designed to bring to the group some thinking and recent experience on motivational research and research methods. Special attention was given to defining the role and functions of the Division of Extension Research and Training and the State research persons. A discussion of analyzing and interpreting study data was included as a result of the preworkshop survey of participants.

Work group sessions gave the participants an opportunity to focus attention on the two major topics and a third group devoted its attention to design for a cooperative research project on program projection.

This report is an attempt to cover as briefly as practicable the vast amount of useful material that was presented in the workshop sessions, in the discussion periods, and work group sessions. It is our hope that this report may be a valuable reference for present and future State extension research persons, for State extension administrators who are concerned with the extension research function, for students enrolled in evaluation courses, and for others who may want information about research in Extension.

The staff members of the Division are grateful to the program participants and to others for their contributions. Special thanks to the speakers who turned in edited manuscripts and to others for editing their transcribed talks.

I want to express my personal gratitude to the professional members of the Division staff and to the secretaries who worked diligently in preparation for and during the workshop.

## OUR RESPONSIBILITIES IN EXTENSION RESEARCH

Luke M. Schruben

It is a real pleasure for me to have an opportunity to discuss your job with you. Mr. Ferguson very adequately covered the interest that we have in this work. He indicated the resources that are being devoted to extension work, the size of our staff and how it has grown, and the growing complexities of agriculture.

Now, one of the real jobs that you have this week, in addition to your specific job as a State worker primarily, is that of thinking through the total extension job and how you can best fit into that picture in order to make the greatest contribution possible in the extension program. Today, we are concerned about two aspects of our job in Extension. One is the size of the resources ~~Extension is~~ managing, measured in dollars, in people, in man-years, in leadership contribution. It is tremendous. Our second concern, which Mr. Ferguson touched upon, is that of the complex society in which we live. In relation to our job, it means that our work, to be effective, must be more precise in terms of its application than ever before.

Generalizations don't fit the bill today. So, our question is, "How can we in Extension keep up with our educational processes?" We are probably keeping up better in subject matter than we are in our methods of helping people apply subject matter to their particular situation.

With that background, let us take a look at the way the Federal Extension Service is organized and the way we operate. As Miss Gallup mentioned, our Extension Research and Training Division of the Federal Extension Service performs a staff function. The Extension Service was not organized primarily for extension research workers. Extension research workers are employed primarily because of the contribution they can make to the basic purpose for which Extension was organized; that is, to carry science and technology to the farms and homes and markets.

Most of the appraisal of the effectiveness of our work has to be made by the person who is actually engaged in that work. Our Extension Research and Training staff here has three functions. One is working intimately with the rest of our Washington staff to improve the educational process -- the application of extension research, as it becomes available, to the situation in which our staff members find themselves. A second is that of working primarily with the States to help their counterparts, just as our subject-matter people work with their counterparts in the States. A third is to engage in research and provide services for the States which can be performed more effectively and efficiently by the staff here. Some of these are:

- (1) Designing extension research work to insure comparability of results, State to State.
- (2) Developing sampling techniques.
- (3) Interpreting results of extension research.
- (4) Combining results of comparable research conducted in more than one State.



- (5) Keeping up on research techniques and helping State persons keep up through training courses for persons assigned to extension research in the States.
- (6) Disseminating results of extension research to the State counterparts and to others as appropriate.

I would like to look with you at the total job, and since the basic responsibility rests with the States, the major part of the job is out in the States. As I see it, the State extension workers in the field of extension research, along with others, have three jobs to do. One is to serve the director in analyzing the extension resources and the resource allocation to the problems in the State.

A second job is the work with your subject-matter people, program people, supervisors, and the entire staff who have an educational responsibility out in the county, to help them become more effective educators.

The third job is to do extension studies or extension research, and extension evaluation. This job cannot for the most part be carried on independently. To be effective, others must be involved. Let's look at it in terms of our fellow workers. There are people back of every program, and although we set up a study of a particular job, in the last analysis we are measuring the effectiveness of people. When we do that, it's important that the people concerned contribute substantially to the study. Your work in extension research will be measured not in terms of what you yourself have contributed, directly, but what you are able to contribute through the people who are working in the counties.

There are areas of responsibility in extension research which rest primarily on your shoulder. One such area is the developing and testing of new extension techniques or methods. I am not convinced that we know and practice the most effective educational techniques. We will improve our techniques much faster if we experiment on new methods as well as measure the effectiveness of present methods. To do effective research on new educational methods will necessarily result in some failures. I am not concerned about such failures. As long as we undertake only methods that are known to be successful, we are not doing experimentation and research in extension methods.

During World War II when this so-called technological explosion was taking place, our budget was fairly fixed. The job was growing up all around us and we were unable to grow with the job. We attempted to cover the field through the mass approach and we accomplished a great deal. Our educational techniques, however, did not effectively and precisely translate the information from the laboratory to the situation where it should have been applied. What is the best technique for this? We are exploring several. Farm and home development is one relatively new method designed to shorten the timelag between finding and applying new technologies. Program projection is the name of another method or technique designed to provide local people with more information regarding their situation in order that they may make a greater contribution in determining extension programs. Program Projection is not a program, but a means of arriving at what the program should be.

How effective are we in involving people? How effective are we in providing those people with the tools that will permit them to exercise sound judgment and make important decisions? How best to service these committees, what kinds of information do they need, and in what form, are all questions needing answers. These are but a few of the many questions needing answers. You in extension research are in a position to provide the types of information that contribute to the answers.

As extension research workers, let us lift the lid on our imagination, dream a little, and explore the unknown for a better, more effective Extension Service tomorrow.

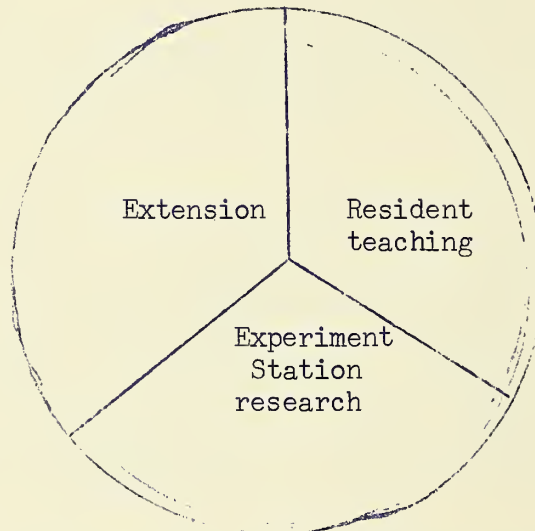
RELATIONSHIP AND COOPERATION ON RESEARCH  
BETWEEN STATE EXTENSION SERVICES AND EXPERIMENT STATIONS

J. Neil Raudabaugh

The Cooperative Extension Service and the Agricultural Experiment Station systems are two members of a trio that is unique in this nation, and a trio that is being studied by people all over the world. Our land-grant college system grew out of, first, the establishment of the colleges (The Land-Grant College Act) -- next, the creation of the Experiment Stations (The Hatch Act), -- and the Cooperative Extension service (The Smith-Lever Act).

If we look at this trio which makes up our land-grant college system strictly from the standpoint of the legislation which created them, we see three separate and distinct units. These three units could be represented as we see them in the illustration below.

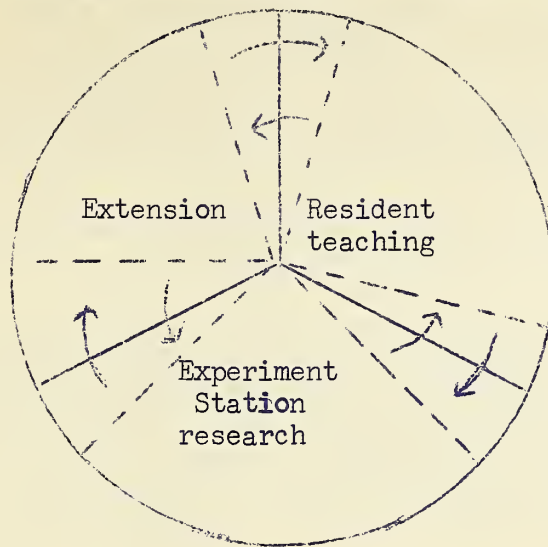
THE LAND-GRANT COLLEGE AND UNIVERSITY TRIO



After many years of operation of these three units, close working relationships and close cooperative effort have resulted. These years have been very productive ones in terms of the objectives of each of the units concerned. It seems to me that we might also add that a process of coordination and perhaps some integration of functions has taken place. This resulting interrelatedness is in evidence in all of our land-grant colleges across the nation, more in some, perhaps, than others. This change that has been taking place as our land-grant college system has grown to maturity and, as its accomplishments have reached new heights, might be visualized by the following illustration.



The Land-Grant College and University Trio after 40 years of operation



This pattern of operation and cooperative arrangements which have developed over the years is receiving the attention and concern of administrators and staff members of all these units. Some of these concerns and problems are strictly "intra" in nature but many are "inter" in nature.

The content of extension teaching is dependent chiefly upon the research of the State experiment stations and research agencies of the Department of Agriculture. The processes and methods of planning and executing programs, evaluating the effectiveness of programs and methods - administration and supervision - are the areas in which Extension has been directing its study and research. By research I mean the study and discovery of answers to meaningful questions and problems through the application of scientific procedures.

Research undertaken to date by Extension has used methods from education and other social science research disciplines and applied them to the problems of Extension as an educational organization. It is significant to note that soon after the establishment of Extension in 1914, attention was given to self-study of the methods and techniques by which it could best accomplish its purposes. This is the pattern followed by any live organization, enterprise or agency. Each of them needs to study their own functions and problems.

There has been a growing and deep-seated feeling that more research in the field of cooperative extension work in agriculture and home economics is needed, and that it would yield high dividends. More than 10 years ago, encouragement was given extension directors to work in the direction of setting aside up to 5 percent of their total budget for extension research and training. The wisdom of spending 5 million dollars each year to find out how to use the other 120 million was recognized.



Some who are accustomed to hearing the functions of the land-grant colleges described as resident teaching, research, and extension, have registered some confusion in regard to the expression "extension research." The terms "field studies" and "extension studies" were used for many years to designate efforts to use scientific research procedures to solve extension problems. In recent years this phase of extension work has been referred to as extension research. The change of the title of the Division in 1955 to the Division of Extension Research and Training is further evidence of this transition.

This explanation of extension research has been suggested: Reverse the order of the words, extension and research, and say research in extension. This suggests the application of the fact-finding or scientific approach to problems connected with the conduct of extension teaching and the operation of the Cooperative Extension System. Research in extension has the same meaning for those engaged in extension education that educational research has for those who are engaged in classroom teaching as a profession.

The current situation in regard to extension research has been well summarized by Associate Director H. L. Ahlgren of Wisconsin in a paper presented at the Land-Grant College meeting 2 years ago. His statement was as follows: "Research can... be used by the Cooperative Extension Service as a master to provide basic facts needed for self-improvement and greater effectiveness. In general, the various programs of Extension have grown like Topsy and the scientific method has not been applied along the way. To date, we have made little use of research as the master to provide guidance and light along the way. We cannot delay much longer the initiation of new studies or the expansion of studies now under way that will provide the answers or point the way to the solution of some of the problems in administration, supervision, program planning and execution, communications, group dynamics, human relations, and many others with which we are now confronted. I am convinced, however, that in skillful and understanding hands, research can be made to serve just as effectively as master in planning and executing our various programs and in guiding our course, as it has served as servant in providing the educational material on which our current programs of work are based."

The all important point that Director Ahlgren was making was that extension directors in general are recognizing that Cooperative Extension can no longer afford to deny itself an adequate modern research service.

The purpose of research is to discover answers to meaningful questions through the application of scientific procedures. It is a critical and exhaustive investigation and experimentation for the purpose of finding out things. All disciplines do research to find out new information or to discover answers to meaningful questions for the use of others as well as for their own use. Likewise each organization including the Extension Service has the responsibility to appraise the methods it is using, the value and application of new information for its own use.

Extension in making use of the results of research from many different disciplines, has a responsibility to study and appraise the use of this information, the methods being used and the results being accomplished. Extension has recognized the need and is conducting some research to appraise its own work, the effectiveness of its own methods, and to answer other pertinent questions and problems.

Currently there are leaders of extension research in 22 States. Most of these States have an extension research committee working with these leaders of extension research. These committees are made up not only of members of the extension staff but of representatives from many other disciplines on the campus, such as sociology, education, psychology and others. Two reasons for having these different disciplines represented are to help the extension people with techniques and interpretations and to assist in deciding as to whether the research problem being considered is one that can and should be carried on by extension workers in an action setting, or if it is one that should be carried out by or with another discipline as an experiment station project, or on some other appropriate basis.

Those engaged in fundamental research and those engaged in action research, such as is attempted in extension, go about their work in much the same general fashion. Each tries to be scientific - to employ the methods of intelligence. There are, however, interesting differences in the design of their studies. In the action research of extension, the investigator is more interested in the particular subjects he is working with and less interested in the total theoretical population of which these subjects constitute some sort of sample. The extension researcher works in a specific, dynamic situation and with specific and identifiable persons. These differences make it somewhat unlikely, though not impossible, that his findings will contribute to the systematic body of information which might be called the science of extension. Those of us engaged in extension action research know that too often we must generalize beyond our data. In Extension we never deal with the same situation twice. We must always be interested in applying our findings to tomorrow, or to next year's county agents and home agents, or to next year's extension programs and participating families.

In Extension there is a great need for the kind of action research that extension workers can best do themselves. This will aid in bringing about more general and rapid adoption of the contributions already made by those engaged in what we commonly call fundamental research. Some extension problems which if studied by Extension require the counsel of more technically trained research workers than are currently available on the staff of the various Extension Services. There is within extension a recognized need for research which Extension cannot do for itself and will need to rely heavily on technically trained research people. Members of the experiment station staffs and other researchers undertaking extension research problems need the counsel of extension workers on some and on others they can and do proceed quite independently. Extension people as action people need to develop



and are developing some basic research attitudes and becoming acquainted with the use of some simple research tools.

After the action group in extension, whether it is at the county, State, or Federal level, decides on a program or a policy, they then become concerned about whether it is having the desired results. It is through Extension's efforts in research that members of their staff who are engaged in action programs are recognizing their need to constantly vary their techniques and approaches, noting the strengths and weaknesses of each. As a result of their efforts some never stop experimenting until they are certain that their techniques work.

Another important step that is being recognized more and more in Extension is: incorporating research into the action process rather than regarding it as something above and beyond it. Too often in the past, evaluation has not been thought of until the action program has been well under way. Extension workers are finding research or evaluation useful to them if the research is incorporated into their action program from the beginning. Extension research helps the action extension worker clarify his objectives and puts him into closer contact with the people he is trying to influence.

#### Points Discussed

Discussions revolved around several points in the first morning's session. The gist of the discussions is as follows:

An extension research person has responsibility for training as well as research. His major responsibility lies in the area of upgrading the professional competency of the rest of the extension staff. To do so, he must take an active part in training, but must also do enough research so that he can make a contribution to research findings.

In order for this dual role to be carried out most effectively, it may be necessary, in large extension staffs, to have several research and training people.

## ORGANIZING A STATE EXTENSION RESEARCH PROGRAM

Ralph W. Tyler

What I shall talk about grows out of experience not as an agricultural extension worker, but out of fields of research related to education. That experience included a few years at the University of North Carolina and at Ohio State University in the Bureau of Educational Research, then later with a group of 30 school systems in what was known as the 8-year study to develop a more effective curriculum for the high schools.

More recently, my experience was in working with some 22 colleges and universities in what was called a cooperative study in general education where the effort was to use the knowledge from research to improve college programs and, finally, there was the experience at the University of Chicago and at the Center for Advanced Study of the Behavioral Sciences. I think some of those experiences are relevant to the problems that you face in developing a State program of extension research.

Thinking about our first workshop some 12 years ago, today I was impressed with Administrator Ferguson's very strong statement of the importance of extension research. We have seen what has happened to our own economy and throughout the world by the application of findings from research. It has not only made an explosive situation in agriculture where farming has changed almost completely in a relatively few years, but the same thing has happened in industry where research has become the means for industry's continued development and improvement with increased productivity and wider distribution of goods and services. As a result there has been carried over by analogy the belief that the results of scientific research can be applied in fields that were not thought of 50 years ago. We have had that idea strongly expressed by Mr. Ferguson this morning. I would like to support this view, that extension research can have a tremendous impetus but at the same time I want to set up some warnings which I think were suggested by the interchange during the discussion period near the end of the morning session.

Let me point out that the analogy has value in suggesting what can be done in extension research, but it has certain limitations. I want to comment on some of those limitations. One of the important limitations is that the problem of research in education, as with research in the behavioral sciences generally, is a very complex one, even more complex than those involved in a field like genetics or in that part of organic chemistry which resulted in the creation of plastics.

In the educational process, you are not doing things to people in the same way that you can to plants and animals. Fortunately for us, human beings are not so simply plastic and so easily manipulated that somebody with power can change them quickly and completely. We do know that people have tried that and are trying it. We know about the Nazi efforts and we hear much about what goes on in Russia and other communist countries in that direction.



We know enough about human behavior to know that human beings are not plastic, and that often great efforts to change people do not bring the results anticipated. In other words, the educative process involves both something that is done from the outside, by the teacher or the extension worker and something that comes from within the learner. The inside influences include what people want: their goals or values, what they perceive in the situation, the sort of energy they put forth, and what they have acquired from previous experiences.

It is possible for three or four human beings in the same situation to come up with quite different effects from the same situation because each of them has approached the situation with a different purpose, with different previous experience, with different kinds of energy put forth in it, different ways of looking at what is being presented. Therefore, we cannot talk glibly about an extension method such as a lecture, a radio or television program, or anything of that sort as being the crucial research factor. This is too simple and is an inadequate way to describe what goes on. Understanding the work of Extension is a problem that involves both looking at what is being done by extension workers and also understanding the people that are involved. In that sense there is a complexity that you do not find in many of the problems of research in the physical or biological sciences.

A second difficulty about expecting rapid development of extension research and its effects, grows out of the fact that it does not draw to the same degree upon the subjects that historically have been offered by the agricultural departments in the land-grant colleges with their emphasis on animal and plant sciences. They have drawn heavily upon work in the basic sciences of biology, physics, chemistry, physiology and the like. Fairly good communications have been built in the last 40 or 50 years with these basic sciences so that new knowledge from these fields is feeding into applied fields of animal and plant science and food technology and nutrition. No such close relationship has thus far been established with the basic sciences concerned with human behavior and the colleges of agriculture and home economics. As a result, extension people are not as well trained in the basic knowledge of human behavior as they are with animal or plant breeding or nutrition and other things of that sort.

It is true that many, if not most, home economists have had exposure to certain aspects of the behavioral sciences through courses in child development and family relations. So usually there is something to build on with the home economists, but this is less true with men trained in the agricultural sciences. Therefore, we can say that we start with people with much less background in the basic concepts and modes of operation of the behavioral sciences than in the biological and physical sciences related to production.

I would like to warn about a third limitation that was implied by the discussion. I think we need to keep the hope and faith high that we can, from extension research, greatly improve the effectiveness of our work with the people whom we serve. This is a good thing, but we must not

build an expectation of too rapid a development. If we expect too much too soon, there will be a great deal of disappointment. After all, if a State has one or a few persons working in extension research to develop the kinds of knowledge and understandings that are required and to make them available in its various forms to the people who are to use it, this is a small allocation of resources compared to that invested in research in agricultural production where there are specialists in each of many fields. You can see that there is a real danger in encouraging expectations that in 4 or 5 years we can have almost a revolution in extension work. I think a revolution is possible.

I saw it happen in certain teaching fields during the war years. One that happened most quickly was in teaching languages to people who were going abroad on various missions. The military services put in a half a million dollars into research with the result that the teaching of languages was revolutionized. The result was that in about one fourth of the usual time, a person reached the required competence. This was a "crash" program but I do not think it likely that you will have "crash" programs in extension research. There is opportunity for considerable improvement but the expectations should be gauged to the resources that are allocated to do the work.

Another problem that came up was the proper use of the resources we have. The question is whether we are going to devote research to finding new knowledge or to applying knowledge that has already been developed and to making it available to people who can use it. I would like to point out that if you look at the tremendous range of possibilities it is easy to see the need for selecting goals that are attainable and not spreading ourselves too thin. You could define the purpose of a State program of research in Extension as being to obtain knowledge and techniques that will provide more intelligent guidance to extension work. What knowledge and techniques do we need to obtain? I have listed some and no doubt you can think of others. We have, for example, the need for knowledge and techniques for identifying the persons to be served by the Extension Service. Presently you take the people that come to you or serve those who over the years have become your traditional group to serve.

With the rapid migration of population to the city and from the city to suburban areas and with the rapidly diminishing number of persons engaged directly in farming, you certainly need to identify more clearly the persons that you are to serve. Who are the critical people that the Extension Service should serve? What knowledge do you need to have to answer that? What do we know about the needs of various kinds of persons in the rural areas? If we take the problem areas as a basis for defining needs, what do we know about the people's problems? What do we know about their background? What do we know about their readiness? How can we set up criteria for identifying the persons that are the most important to be served in order to render the greatest contribution to them as individuals and to our society? Then, after identifying your clientele more intelligently, a second problem is met - the need of much more knowledge about techniques for reaching those that are to be served.



Suppose that you have identified certain kinds of persons as the most important ones to be served by the Extension Service. Then the questions arise, "What do we know about ways to reach them?" - "How do we get them into the program?"

Research to answer these questions often comes from a variety of fields. For example, the rural sociologists have thrown much light on the characteristics of persons that currently enroll in various kinds of farm and home programs, or the children that go into 4-H Club work. From social psychology have come suggestions about how to reach them and what factors influence their decision to participate or not to participate?

Another need for knowledge is in connection with program planning. Program objectives are now based upon considerable knowledge and research, but we have rarely had a comprehensive body of data. Usually we take some review of the current demands, the problems that are immediately confronting farm people, new agricultural developments, or the farm and home problems that arise.

Less knowledge is available about the kinds of basic needs that people have and about the interests that they have that should be taken into account in program planning. Generally we have not systematically drawn on the whole range of fields that might be considered to find out what objectives would be suggested. We need more knowledge to set attainable goals. For example, we talk about the mental health problem that increasingly confronts us, but a thorough canvass has not been made of the kinds of objectives that can be dealt with by the nonprofessional people to help improve the mental health situation. Yet, choosing attainable objectives is important. If we don't select attainable objectives, we are likely to become discouraged with little accomplishments because the objectives are beyond attainability under the operating conditions of the Extension Service.

On the other hand, we may pass up important objectives and take on little ones that people immediately will do, like making baskets or painting flowers, rather than try to see more clearly what could be attained. Steps can be taken one at a time in order to reach defensible and more important goals.

We need knowledge and techniques for planning good learning experiences. What do we know about learning? There is a good deal known about learning, and about the conditions required for learning; we know the importance of motivation, but do extension workers know how to make a useful canvass of the motivations of the people with whom they work so that they can be conscious of the motives? Do they know how those motivations can be used in getting greater energy and concern about needed learning?

What do we know about ways of helping to guide people in practice and trying out new ideas rather than simply telling them this is it? Much has been done with ~~developing the~~ learning materials. However, they need trying out and testing with particular groups of people in order to find out if the materials are meaningful. And what about evaluating program



planning? We need more knowledge and techniques of evaluation.

Another field in which we need more knowledge is in program execution. We need to know what is required to make the planned program an effective operating device? How can the extension worker work most effectively? How can he use voluntary leaders and other resources most effectively? We need knowledge and techniques about the best ways of selecting and recruiting voluntary leaders. We need knowledge and techniques for the training of leaders. We could set up a whole series of questions we need answered about supervisory and administrative procedures. It might include the problems of knowledge and techniques for the selection and recruitment of people to make a career in agricultural extension and those related to the proper preparation of extension workers. My purpose is not to make an exhaustive list but just to show that there are needs in all of those categories and that we could not say that knowledge and techniques are so complete that we have adequate answers for the problems that we encounter.

It is wonderful to get into extension research where the challenge is great and there is so much to be done, but it carries the danger of spreading one's self too thin. All these problems or questions cannot be attacked at the same time by one or two people without such superficial work being done that the individual doing it will feel unhappy and the results achieved seeming so unimportant that people will say common sense would have told you that anyhow. Then they may ask, "Why did we invest any resources in extension research?" I think it is useful to have a map of the total terrain to be conquered over the years; but we should have realistic goals that can be carried out successfully with the resources available so that the values from them can be seen and provide further encouragement for moving on to other parts.

Another way of looking at the problem is to note the sources that can be used for obtaining the needed knowledge and techniques. I have mentioned several resources here. Certainly one is previous extension research and this, we are told, is one of the roles of the Federal Extension Service - to bring together, as they have from time to time, reports of previous extension research that might give us some leads. A second resource consists of relevant research in the behavioral sciences that has not been focused particularly upon Extension. This resource has tremendous possibilities if rightly used. However, it takes a good deal of sophistication to recognize the problem.

For example, take the research on small-group behavior from which the group dynamics movement came. It is known that small groups have the work problem, that is, whatever they came together to do. For example, the work problem of an extension committee may be working on a county program. The second problem is how the group can work effectively. This is a social relations problem of how to produce the proper effect upon the members of the committee so that there isn't emotional tension such as that arising from the effort of some to achieve a higher status over others. There have been many analyses to determine situations under which the social problems may be adequately dealt with and work efficiency increased.

You cannot say there is a great deal of research on small groups as they operate in Extension, but the research of social psychologists gives us some helpful things. It provides some working concepts, for example, the notion that we can look for the work problem and the emotional problems. This is a useful guide for our own observations as we work with a small group.

Another illustration is found in communications research only a little of which has been done with agricultural communications, but we can learn a number of things from the research of others. The notion of the role of two-way communications in providing feedback is an example. Even the terms "two-way communications" and "feedback" grow out of the research in the behavioral sciences.

Let's look at what happened in the so-called pure sciences in relation to the applied ones. I am sure that Mendel's first work on genetics with sweet peas, was not thought of as having any particular agricultural significance. Getting the notion about genes and about recessive and dominant characteristics and the like provided ways of thinking about the particular problems that were important in agricultural production. And the same thing holds for the behavioral sciences.

To cite another illustration, there has been a great deal of research on the problems of social stratification. Although we think of ours as a classless society in this country, and we do not believe in rigid social classes, actually we do have some social classes and it seems likely that all complex societies have them. The main ways they differ is in their degree of rigidity - whether persons can move up or down in the social class structure. Keeping up with the Joneses, a common phenomenon in America, is another way of saying that some persons seek to behave like other people that seem to them to be in a higher social class so that they may rise in social class structure.

The whole series of researches on the social stratification has relevance in helping to understand how some people behave in extension groups when they represent or desire to represent different social classes. This conduct may consist of not wanting someone to belong to this particular club or in trying to join clubs that they think will have greater social prestige.

I merely wish to indicate that there is a job for someone - surely it must be done by the persons in extension research at the Federal or State level or by drawing upon the resources of the Experiment Stations or other parts of the colleges or universities. Someone needs to translate the applicable research in the behavioral sciences and to say what facets of our problems can be looked at in this fashion, or can be analyzed in the terms that have seemed to be useful in other areas. Some research you will find very useful. In other cases you may say it is so inadequate or ineffective, that extension research is needed even to give the terms with which to examine and to think about the problems.



A third source consists of the research studies actually made by the State research unit. I sympathize greatly with the view of encouraging research to be carried on by the persons who will be using it because it avoids much of the communications problem. But some aspects of research are complex and require special competence not possessed by all those who will use the results.

We found with the 8-year study that much of the study of progress by students in the new curriculum could be carried on by the teachers. Much of our work was in summer workshops with teachers, helping them to plan studies they could do in their own schools and in their own classrooms. However, there were some things that they had neither time nor the technical competence to do. Therefore, it was quite proper for someone else to do these things for them. One obvious thing was the preparation of the instruments - the making of good tests, observation guides, scales, technical tasks that take time and are not likely to be done if left entirely to the joint enterprises of a research unit and the persons that actually use them.

The same is often true with some materials. We do not hesitate to use a book or a pamphlet or a moving picture that someone else has prepared if it is relevant to our purposes. I think that many kinds of research jobs can be done effectively as a joint effort in which extension research units or individuals work with other people in the State office and/or at the county level. There are others that can be made best, more conveniently, and quite satisfactorily by the State extension research unit, in the Experiment Station or otherwise. For example, in the analysis of small group behavior, the original categories came from people who had time to make transcriptions of tape recordings and analyze them very carefully. These materials were useful for others in working with their own groups.

Let us not assume that all research must be done one way. We can obtain values from work done in the field, from work done by the research unit itself and from joint research effort. Also, there is the possibility of local studies being done by persons without any formal assistance. Extension workers in the counties have done some things on their own without guidance that proved useful and need to be brought into the picture in getting the knowledge that we need.

This situation gives us a tremendous field and dangers of two kinds. One is, that we will try to do too much. The other is that we will settle for the immediate applications. I do not share the view expressed this morning that since eventually research must be fed back into and become a part of the on-going Extension Service the best thing is for the research unit to devote most of its attention to working on answers to immediate problems. If you take the analogy from other research enterprises, there has been some value in having certain people set apart just to do research in fields like genetics, hybridization of corn, although eventually it has to be fed back. It takes too long for this new knowledge to get back, therefore, let's work always with the farmers upon their immediate problems. I fear the all-or-none basis will get us in a position where we are not really finding new knowledge.

Much of the improvement I believe possible in agricultural extension work must come from a new conception of what teaching is. As we discover more about human dynamics - what our clients come to us with, what they want, what they are trying to do, how they are trying to use extension for their purposes - then we will get quite a different conception. As a result we will no longer talk about whether or not to lecture. A lecture would become only a means to an end where the ends are the ends of our clients and ourselves and not a particular device that can be defined in clear-cut, terms. But this view may at first seem to many extension workers to be too theoretical, too far removed from the questions that to them seem important. If somebody says "Should I be writing a script this way for a radio program?", to say to them "Should you have a radio program?" or "How do you know you should have a radio program?" may cause them never to turn to you again. So some of our effort will need to be devoted to attacking the immediate problems as seen by extension workers.

With only one person on extension research in a State, however the responsibility is divided, it will be partly the research person's temperament that will determine how much is done of one thing and another. I would urge that in order to get continued support you need to have some pay-off material continually; but in order to get some good answers for the future you need to have some long range research going on. In other words it isn't wise to settle for one now because it takes too long to get the other. In every State there should be some of the long range and some short range research. Failure to do long range research means that after a while the program is just carrying on the best notions that people have at that time. The failure to do any of the short range jobs - that is to help people with the problems as they now see them - soon results in people saying, "Those highbrows aren't really doing anything helpful" and there is no longer support for the research.

I observed the dramatic results of different approaches to the application of behavioral sciences in two branches of the military service. The Air Forces set up a branch called the Human Resources Research Institute. The head man said, "We do not want any of these short range answers" and, of course, the generals agreed. Who wants a short range answer when they can get a long range answer? As you can imagine, after five years when still there were not any short range answers and they had to justify the expenditures before Congress, it was decided to close out the Human Resources Research Institute.

The other case was that of the Rand Corporation, a research institute that largely operates for the Air Force. The head of the behavioral sciences, Hans Speier, took the position that for every dollar, there would be at least 10¢ spent on short range business to give immediate answers and at least 25 to 50 cents of every dollar spent on long range research. This program is still operating and receiving financial support because the people concerned can see that they are getting something for their money in answering their short range questions. And at the same time Speier and his staff are building some very significant long range principles, generalizations, and concepts for looking at the problems of international relations under military tension. This could not have been done if he had



directed all of his resources to the short range research. He never would have had a chance to do it if he had devoted all of his attention to the long range research and never done anything year after year about getting answers to immediate problems.

I am arguing for recognition of these various levels and that the pay-off in research in the end is going to be more fundamental understanding - an understanding that may question the very questions that people raise. We need an understanding that will cause us to look back of what apparently is happening and try to find deeper meanings behind it that are not apparent on the surface and that the usual person engaged in the enterprise hasn't thought of before. This is the substance of basic research. Some should be going on. In my opinion, if it isn't done in the Extension Service it will not be done for extension anywhere; therefore, I think a State should not cut it off altogether. At the same time, there should be some that will pay off quickly. The problem is how to keep the proper balance because you cannot do everything at once.

The jobs undertaken should be ones that you feel can be carried through well and only those, regardless of pressures to do other things. There are useful criteria for making the selection. First, is the obvious one of choosing the kind of problem that you feel competent to attack in view of your present training or training you can get within a short time. No one person can have the wide range of training that is required for dealing with all kinds of questions - no one person does have it. Therefore, you should choose those problems that you feel confident that you will be able to work on successfully, those for which you have techniques and knowledge to attack, or, if not, you know where to get the needed help. Second, choose an area where you can see how the field might be opened up. For example, some openings have already been made in the field of small group research. A third criterion is the degree of interest that can be aroused to get the kind of cooperation that is needed in getting data, and in thinking through the problem. It may be better to begin with the problems that are not the most critical, unless the most critical problems are also the problems that you feel prepared to do something about. I hope that both the interest of people and your self-confidence would move you toward dealing with the more critical problems. If you take additional training, it should be especially to deal with the critical problems.

In the 8-year study, it became apparent that there were two major areas of critical problems. On the one hand we needed to know much more about adolescence than we knew and we needed to find out more about adolescents. We invested much money in research on adolescence. The other area was that of evaluation. We needed to know much more about how to appraise learning and the progress that students were making in order to tell whether something was working or not. So we invested a good deal in evaluation. As we became confident that we could get some techniques to use we turned our energies to what seemed to be the critical problems connected with the kind of training and knowledge that we were teaching at that time. My purpose is to suggest that in order to keep from being spread too thin that you choose a smaller number of things that you can complete. In the early stages the selection will be guided by your

self-confidence and knowledge you can draw upon to solve the problems. You will want success in the early stages to get further confidence and understanding.

Another problem discussed this morning was the audit function - telling how well we are doing. I am always disturbed by this problem in relation to the research function because I think the responsibility for auditing ought not to be the responsibility of the research unit, because the atmosphere inevitably becomes one of trying to show how well we are doing. The research function is one of trying to find what the problems are and what we do not now understand, or what we need to understand or do better. We want people to come with problems and to say frankly where they are having difficulties rather than to try to show superior officers and the Congress how well we are doing.

I have worked with both sides of that problem in the educational field. The Klein Commission in 1931 or 1932 at Ohio State proposed that our unit in the Bureau of Educational Research be put directly under the President. We were concerned with evaluation, the appraisal of the effectiveness of instruction. I argued against this view and we were not put under the President. I think it allowed a relationship with the teachers and departments such that the problem became, "How can we do a better job?" rather than "How can we justify this appropriation?" to the President or by the President to the State legislature.

At the University of Chicago the examiner's office was directly under the President with a dual function that always caused some difficulty. One function was the business of establishing the competence of individual students and the determining of whether they should be given degrees or not. At the same time we were interested in improving instruction and learning more about the problems of learning. Although we carried on both functions, I was always conscious of having to put on a different hat and talk to the faculty in a very different fashion for the two different purposes because they were always getting confused. The administrative auditing function - "Are we getting our money's worth?" - got mixed up with the research function.

One other point for the research program. The Extension Service needs a theory of learning that is different from the public school theory of learning. You work with adults who spend most of their time in other than extension activities, timewise the learning stimulated by extension is only a small part of their lives. For example, we need answers to these questions: Why they have taken on these farm practices and not those? Why do they take this view towards foreign policy and not that view? The answers require an understanding of the educative process that is going on in a variety of groups other than Extension. What is the newspaper doing? What is the TV doing? What is this discussion group doing? What are the farm or other organizations doing? These questions illustrate complexities in understanding learning. It is where we can be of most help in extension or where extension is running against a whole series of counter-factors in experience. It is very important in extension but not so important in the learning of a 6-year-old child for whom the school and the home together comprise probably 80% of the learning

experience. There is a need for understanding of how extension works into a larger context, instead of just thinking of its own narrow goals. It requires a complex theory of education that I don't think will come from any other source than Extension, because it is different from the situation around which our school theory of education has developed where it and the home are the primary sources of learning.



Summary of answers to work group questions on  
ORGANIZING A STATE EXTENSION RESEARCH PROGRAM

Ralph W. Tyler

In my presentation, I took for granted the establishment of a committee that would be concerned with extension research. A question is now raised regarding the composition and roles of a studies committee. My own experience in educational research has shown the value of some kind of advisory group to serve both as a channel of communications to various parts of the organization and as an aid in policymaking and decisions on difficult problems. An advisory group is helpful in clarifying the way the research person, if it is one person, can best distribute his time and in clarifying some of the issues.

We tried to have our committees on educational research represent two kinds of people. One group consisted of those who, because of their own position, would further channels of communications. In Extension, I suppose, they should represent the various parts of the Extension Service to which and from which communications would need to be channeled.

Likewise, other related departments like to experiment station and resident teaching staff might be represented by persons chosen because of their known ability to give wise advice on the kinds of problems under consideration regardless of the area they represent. I worked with committees ranging in size from 7 members to as many as 15.

The difficulty with large committees is getting members together for continuing discussion. We usually planned at least bimonthly meetings but they actually met more often. The formal meetings were to review what was being done and to raise problems about the program that permitted policy discussions rather than specific yes or no answers. In addition to formal meetings, more frequent talks were held with individual committee members about problems and to get their advice was very useful.

Although we give lip service to the idea that advisory boards and committees are necessary, little has been done on developing means of effective management. A clear understanding of functions is needed to avoid frittering away time. The chairman should be able to distinguish between the role of the committee and administrative matters. I quite agree that if you don't use a committee well it can become aimless or it can become a group with each member trying to sell his own special interests. It is necessary to learn how to work effectively with a committee, to help it clarify its legitimate functions and determine what it can do.

Someone asked about the use of a task force type of committee versus a continuing studies committee. When you need help on a particular problem a committee formed to advise on a particular project is a good thing. The value of a standing committee lies in building up over a

considerable period of time a tradition and understanding of what it is to do; this facilitates a high level of statesmanship. New members can be fed in through staggered memberships so that you have a stable continuing deliberative body such as we have come to expect from the better boards of trustees. In other words there is a place for both, but a task force doesn't take the place of a body that has been in operation long enough to think about the important questions over a period of time.

Now, let's turn to the question, "Should the studies person be the chairman of such a committee?" The advisory committee for educational research at Ohio was chaired much of the time by Herschel Nisonger who was at that time Junior Dean of Agriculture. I thought the arrangement ideal. He really believed in the research function. At Chicago I was chairman of the board of examinations which was the same kind of body. I felt limited because to give proper consideration to everybody's views ties your hands when wanting to present a policy for consideration. I would prefer a chairman who has prestige and recognition throughout the organization and who believes in research rather than to be a chairman who is seeking advice from the group. In developing a vital program the question of function will be continually arising. However, a central role that a standing committee can always serve is wise advice from people who are concerned about the operation. They will give unselfish help from their great knowledge of various parts of the agency. If the research person thinks he knows all of the answers and wants only a pat on the back then the committee will get restless. If the committee is not to be used for wise advice and counsel then you shouldn't have one.

Another question raised was, "How can we avoid getting all sorts of odd jobs assigned to the research person?" Bring this problem to the committee and point out your inability to meet all demands and the need to have priority for a few things that are definitely research. A committee can be very useful in helping to develop realistic expectations of what can be done with the limited resources.

One question had to do with clarifying further the range of studies that county agents might be involved in from the simplest level to the most complex and to clarify the role of the studies person. When starting a function of this sort first make a long range plan, then decide what can be started immediately. In order to protect the long range plan some time should be set aside - a minimum of 20 to 25% - for the long range or fundamental research. I think of the more long range study as one which will give fundamental principles, provide instruments for operation or methods for collecting data. Having protected the long range program the way to get the quickest results is to capitalize on people who are already interested and would like to do something.

What skills or abilities does an extension research person need to have? When we think of the job to be done, consider all the required qualifications to do it perfectly. We have a description that the saints couldn't have met. Finally we realize that we must take the best people available and none are perfect. The answer is to select a person who is definitely interested because if he doesn't give a darn about it, then obviously you



are not likely to get much development from him. Choose a person with some of the needed skills. Nobody will be able to do all things in the beginning. Two things will be expected. First, that he will develop more understanding and skills. Second, that we will have experiment station persons to supplement his skills by advising or by undertaking certain studies. No matter how competent the research person, he will not be able to do as well alone as he can by getting assistance. The research person should capitalize on what he can already do well at first, in the ensuing years learn other things that will be helpful, and call for help from others when assistance is needed.

A favorable climate means that the staff members have an attitude toward the extension research person which is favorable. It is typified by a feeling that from this work will come something of value to the staff generally, and to most all of the individuals, rather than looking upon the extension research person or the program as being something of a threat to the work or to themselves. Responsibility for a favorable climate rests jointly upon the administration of the organization and the person or persons who are to carry on the work for which the climate is developed. I judge from what we heard yesterday that there is a favorable climate at the Federal level so far as the administration is concerned. Mr. Ferguson commented on the importance of research in extension and the effort to capitalize on the analogy from the value of research in the improving of agriculture and home economics. He expressed the hope that research on the problems and processes of extension would have corresponding explosive results in greatly increasing the effectiveness of the extension programs.

To have an effective program in a State and not work against odds the administration needs to give this kind of encouragement. The director and others in the administration will need to talk enthusiastically about it. They will need to remind the staff of the importance of the research function, of the expectations from it and of the basis of their faith, as in the analogy drawn from the value of research in other enterprises. So, it seems to me the first consideration is what the administration is doing about its responsibility to favor, to encourage, and to set up the research function. It is poor administration to set up a function and then to treat it skeptically. If they believe in it enough to establish it, it is the responsibility of administration to treat a new function favorably.

Those who work in research must expect to work cooperatively with other people, to consider carefully the questions and problems they raise, to make a contribution on the short term as well as long term problems. They must foster the kind of climate that develops from friendly cooperation and helpfulness. They must appreciate that staff members may be doing things ineffectively, not because they want to, but because of the lack of knowledge, the time or resources. The research person must not act as one who looks down his nose at others who are not research people.

I have observed unfavorable climates growing out of insecurities of the persons taking up a new job. I recall the case of a certain university position where a great deal was expected from educational research. The man in the position felt insecure, lacked confidence in his ability to work with the faculty members who had great reputations, and as a result

went overboard in trying to put on a front. It took only a year or so for the strained relations to result in his elimination.

Related closely to climate among the general conditions for effective extension research is the question of delineating the specific areas of research to be done in Extension and that to be done by other departments. It is too early to give a hard-and-fast answer as to just what is done by the extension research persons. I believe this because it seems to me that we need greater experience to find out the kinds of things that can best be done in Extension. Also, it is probably true that even after many years of experience the structure and the traditions of the particular institution may have more to do with determining whether the persons who are happy in doing certain kinds of work will be found in one department or in another. It seems to me that primarily this extension research job is to see that extension problems are being studied and to bring to bear the needed resources to deal with those problems.

When I had a somewhat similar position in educational research, my view was that I should be spending some time in the field with the teaching persons, trying to sense from their conversations and from my observations, what were important problems. At the same time I was trying to learn where resources were to attack the problems. It seems clear to me that the extension research person first has the role of the middleman in finding problems, then bringing together the problems and the resources to do something about them. Second, almost inevitably he will find that although there are many other resources, there will be people on the extension staff who will be interested and willing to do studies. This is the way in which to get greater understanding. There may be people in the Experiment Station or subject-matter departments, like psychology or sociology, interested in attacking some of the problems or guiding graduate students that do so.

It is important for the extension research person not to devote all of his effort to getting others to work. He should do some research himself in order to see the problems more clearly and see what needs to be done. Also there are some kinds of problems that are so uniquely Extension that they are not likely to be within the area of interest of other agencies. In my opinion the answer cannot be given in advance regarding specific areas of extension research persons. On one hand the research person is a middleman bringing together problems and resources, and on the other hand he functions as the research man or the director of research himself.

The extension research person's place is related to climate, functions and definition of the role of the extension research person in the Extension organizational structure. That relation ought to be one where the extension person has a place in the organization where he is clearly not responsible for conducting extension programs or auditing or administering other extension personnel not connected with research. This means a position on the staff of the Director of Extension where he is clearly there to render the research service without the responsibility for supervising or actually conducting operations other than those related to the research function.



Obviously, we are talking about ideal situations. I have had to do certain functions that seemed to be in contrast with the research function. If I couldn't persuade the administrative officer that this really should not be assigned because it would create the wrong impression of the area, then when I carried on the function, I made it perfectly clear that it was not the research function. The effort then was to clarify that research is not directed primarily to a showing up of the strengths or weaknesses, but rather to helping understand and improve.

Of course, as soon as research becomes common information, it becomes the basis for planning and evaluation. Research always feeds back into operations and into the evaluation of operations. I meant the direct business of saying whether Smith's program was a satisfactory job or not is likely to be a little too direct to get the best cooperation from Smith.

The Ohio plan provides that the research person doesn't have the responsibility of serving as advisor or chairman of advisory committees.

The person occupying the research position should be seen as consultant to extension workers, who, in turn, if they are doing graduate study rely upon the department within which they are studying for the formal direction of their study. This precaution prevents the extension research person from having his time tied up to advising students and having little time for other research activities. Where studies require a basic research approach it is visualized that they will be set up in cooperation with the agricultural experiment station and be officially listed under a specific project title and be assigned a project number. Studies originating within the Extension Service will carry their own description and sponsorship and so on. This is an effort to recognize the kind of structure that has developed where you have a separation of resident teaching, Experiment Station, and Extension and trying to utilize all these resources while leaving the extension research person with greater freedom to work.

It is very necessary when you establish a new function to separate it so it is not absorbed and lost. A common way of destroying a new function is to say of a new function like extension research, "but isn't all extension work involved in some research" and pretty soon you will say, "well, we are all doing it, so there isn't any need for special function." You will find from the records of both business and the colleges and universities that whenever a new function of importance is developed, they have to set it aside and separate it for fear the lines will be broken down, and it will be lost among the other duties.

In the beginning it was very necessary to establish a separate function of the Experiment Station and a separate function of Extension. When such functions grow of age, and when they are commonly accepted, I think it would be a good thing if the barriers could not be broken down and you recognize the work in the field of agriculture or broadly in the field of rural life. Ultimately this would apply not only to research and graduate instruction related to it, but also to departments that haven't been thought of as a part of the college of agriculture, departments like psychology, anthropology or others that might bring something to bear on extension problems.

WAYS OF GETTING FINDINGS FROM EXTENSION  
AND OTHER SOCIAL SCIENCE RESEARCH USED

Ralph W. Tyler

I would like to examine this topic in two ways, both for its usefulness to us here, and because it illustrates ways of opening up problems where we are expected to do some research. One is in terms of the difference between an immediate answer and a more fundamental answer. I would like to discuss the methods commonly used in the professional fields, like medicine, law, and others, to get findings used and then turn to another method of analysis which goes into the social psychological factors that might foster or inhibit the use of findings.

So, taking the first method of analysis, let's classify methods that are commonly used in the professions. This first method is going to be discussed at length later, so I shall just mention it. It is the method of action research in which the persons who will be users of the research findings when available take a very active role in the actual conduct of the research. It is often used where the research does not require a laboratory. For this reason you rarely find this method being used by doctors in the care of acute cases because of the laboratory research requirements that the typical doctor isn't able to do. On the other hand, action research is often used in the public health field where it is possible for the public health worker to participate and do much of the research himself. It is increasingly used in various kinds of educational research.

Max Corey, Dean of Teachers College at Columbia University, was for years head of their institute of school experimentation dedicated primarily to action research through working with school people who could use the findings of the research as they became available. Glenn Dildine's citizenship study for the 4-H Club Foundation has action research as the basic element.

The second method is to focus the research on problems that the persons who could use it consider important. Thus the research focuses on something that people are disturbed about. It deals with the real problems on which people are prepared to do something different because they are not satisfied with what they are now doing. It is much easier to bring about changes in people's practices when they are not pleased with them than when there is a good deal of satisfaction with present practices. The point is to start with problems that really concern people.

In some cases, this has meant beginning with new fields. It was not accidental that some of the most interesting educational research was developed in home economics in the high schools and colleges; it was among the last fields to enter the curriculum. There were questions about how to do this work, because there was not a pattern that had been in operation for very long. Even when there are difficulties already encountered and on which help is needed, it is necessary to keep giving periodic reports on the attack on the problem so that the final report won't come as a



great surprise. If findings mean changes in practice, most people require some preparation for those changes.

A third method used by many professions, and I know by yours, is to bring findings from research into the inservice workshops. This is often necessary even when one or more of the first two steps have been taken, because findings often mean a redesign of procedure. For example, findings from one study indicated quite an inefficient pattern of time allocation on the part of the extension staff. The replanning of program so as to have a more efficient use of time cannot be done in spare moments. Fundamental rethinking may be required and this is one of the purposes of a workshop. Workshops are an important means used to give people freedom, preferably for several days or several weeks, to think through and replan their work. The whole workshop idea really developed out of feeling of this need in connection with the 8-year study. For a while we tried committee meetings and met with the teachers, but they were not free during the year and could not incorporate much.

A fourth method is that as research findings come in they are incorporated into what is called in military circles the "S.O.P.," the standard operating practices of the organization, so that they become the accepted way of doing things.

Dr. W. W. Charters advocated and used with Extension as early as 1932 what he called manualizing to get into use as rapidly as possible ideas that were formulated. This consisted of putting research findings into the official manuals or standard practices of the organization quickly. He advocated the development of manuals on how extension work was to be carried on, one manual for each type of extension worker as a definition of standard practice. He thought it could be used in the training program and in undergraduate courses.

I worked with Dr. Charters at that time, and since his death I have continued with the Rochester Institute of Technology which trains engineers and various kinds of technicians. They have kept up what Dr. Charters called the "manualization of the area."

I recognize that there are some kinds of activities where the standardization may be a hindrance to initiative and development; therefore, I am not recommending this as something for every kind of activity. However, when research findings change the standard practice, this is one way of getting it into the operations. I believe the Federal government more commonly incorporates changes through new forms than any other way.

The fifth method, the method of the demonstration, was developed largely by the Extension Service. Interested and energetic individuals can provide demonstrations of what can be done when you use findings and thus modify practice and procedure. This was the method that I found most useful in introducing educational research at Ohio State. Otto Croy and C. C. Lang were active in doing that sort of thing. They were among the interested and energetic individuals.



Find people who are interested enough, who can take the time; and by working with them, they become demonstrators of how to use research findings.

A sixth method is one that is used by business much more often perhaps than by others. I don't know how often Extension uses administrative reviews and other administrative pressures to get findings incorporated into the operations. This method, if the administration recognizes that the findings are important, ought to become part of standard practice. In educational institutions an administrative review is a periodic thing.

When I was a dean, chairmen of departments came in to talk about needs or plans, which made it an opportune time to review what they were doing. It is amazing how the kinds of questions that administrators ask become a kind of pressure to establish these findings.

I am not an advocate of pressures. My own feelings are more with the person who is under the administration than the administrator, although I have spent over 20 years as an administrator. The others are more interesting ways of getting findings used, but, nevertheless, the administration has the responsibility, as the applicable findings come out, to use administrative request and pressure as a means of getting the findings incorporated.

A seventh method is one most commonly used by the medical profession. The greatest changes in that profession have come by graduates going out from training that incorporated new medical research. Officers of the Association of American Medical Schools and the American Medical Association said that the greatest developments had not come from changing the older practitioners, but through the new physicians and surgeons, who in their training were brought into contact with the new research and the new ways of dealing with the medical problems. I think this is easier when there is a long period of training, than it is in Extension since many persons joining the organization have practically no formal training for extension work.

There is an eighth method used by medical people, but I don't see how it could operate in Extension. It certainly does operate at the level of the farmer. It is the use of the findings by persons who sell materials and supplies. The pharmaceutical houses in developing and advertising biotics influenced many of the older doctors who had not read any of the research and had played by ear for years. This has occurred in transferring the findings of research in agriculture through the work of fertilizer companies and hybrid corn breeders.

Thus, we have one way of analyzing it, that is, to look at the methods the professions have proved successful and then determine how far they can be adapted to your purposes.

Another way of analyzing this problem more fundamentally is based on better understanding of the human being who is the extension worker. There are many ways of looking at human behavior, but I'm going to suggest only a few rather than exhaust the series. As you know, the term behavioral sciences is simply a name to cover a number of different disciplines like psychology, anthropology, sociology, political science; certain aspects of economics, neurology; and certain aspects of human physiology, etc. It is the name for disciplines that have in common trying to understand human behavior.

Up to this point, there hasn't been a single way of looking at the complex matter of one man's behavior in relation to other men. Each field of behavioral science has developed its own way of analyzing and explaining behavior. Take the model of human behavior as presented by the psychologist. He views the human being as a dynamic organism that is normally using energy obtained from the metabolism of food. After a person reaches 8 or 10 years of age, he has established many habit patterns which he follows day after day without change except when his basic needs are not being met or some values that he cherishes are not being attained. Changes in his behavior will normally come only if he finds that the way he is doing things now fails to meet all of his needs or conflicts with values that he cherishes.

Among the needs of every human being are the physical and biological needs. Most extension agents, however, are meeting their basic biological needs so that the agent's changes in behavior do not often strengthen his biological needs. Obviously, if something goes wrong and some of his biological needs are not being met, he will change behavior.

Another common set of needs are the social needs. A human being has the need of belonging and feeling that he is part of a social group. One of the problems of the person who receives advanced training and who wants to do things differently is that he may be ostracized by the social group. We learned this from studies made of what happened to new and young teachers in some of the older schools in Chicago. Many times a person who comes with new ideas to a group whose members don't have them, finds it necessary to get their approval; in other words the need for belonging may operate to keep people from changing.

Another social need is the need for status or recognition. It is manifested in a drive for improvement in position and status. We have all known persons who get leadership in the group and status by being a leader of the opposition. Sometimes people shift from the opposition to leadership of new developments because they see the possibility of greater social status.

Another kind of need is sometimes called integrative. This is the need one has to see his life and the world in a meaningful unified picture. One needs to see himself as part of something bigger than self. This is the need which makes men seek a religious or philosophic outlook on life. It can be a driving force for change when the person sees that old



practices do not make sense in any kind of an intellectual view of the world. Some people change behavior when they see the new practices as "making more sense."

In addition to needs influencing behavior, values are also important. Every man has things he cherishes and that are important to him. Sometimes one's values have not been put into words, but professional people who tend to express many things in words are more likely to state their values. Part of the role of training is to help the new member of the profession to accept and cherish the major values of the profession. One of these is the concern with the welfare of clients. If, for example, you identify as your clients the farmers of a particular area, their welfare makes a difference to you. You care about whether they are being well served.

Another common professional value is the importance attached to doing a good job. It is the desire that is necessary - to be a good extension worker, to be a good teacher, or to be a good administrator. There are always professions that attach high value to the amount of salary, to status, and to the name given the occupation. Then there are also many personal and family values. Most persons who have families attach considerable value to their welfare and care which enters into the dynamics of the home life. The failure to attain one's values becomes a force to change one's practices.

Now, using this model, you can ask a person "Why is it Smith does not adopt these research findings?" "Is it because the findings will upset his habit pattern?" "Does it require a considerable reshaping of his ways of doing things?" If so, it is not likely to take place unless we can get at some of the basic factors in his individual behavior, such as his needs or values. It's easy to change if it doesn't require a fundamental shift in habit. If we can substitute penicillin for aspirin that is very easy, because it doesn't take much change. It doesn't take much to change from smoking one brand of cigarettes to another. That's why advertising is easier than teaching.

Most of what we try to do that is important educationally is not as simple as that. Usually the changes involve a reshaping of habit patterns and attitudes. These kinds of changes are much more difficult for the individual and require ways of stimulation that are stronger than the normal habit reactions. Generally, nobody changes behavior for just one reason. Usually it takes a combination of two or more things to be strong enough to upset established habits.

This leaves unanswered the questions about where people get their values. We might look at a model as it is seen by the social psychologist - a group dynamics model. This emphasizes the strong drive of the individual, when he is a part of a small group, for maintaining good social relations with the group. If the group includes a number of strong people who are really concerned about using findings, then others will be strongly affected. This explains why findings should be discussed or worked on in small groups. Because of the strong dynamics in face-to-face groups, as well as the strong desire to be accepted, small groups are one of the



main ways in which human beings satisfy their social needs and many of their social values. Studies of voting show that it is a rare occurrence for voters to be influenced to change their votes by large meetings; it is the small group, the family and close friends where the values tend to be formed and where needs are met. If you analyze change in that way you see that forming small groups for discussion and work is a way to develop high morale, strong social acceptance, and social unity. This is another way of getting understanding, acceptance, and drive for the adoption of values.

Another model also comes from social psychology, that of the occupational group. Human beings in our society are born with basic needs to be met that are provided largely by the mother and to some extent by the father in the home. If the child develops in a home experience where there has been a great deal of love and approval exhibited, a relatively stronger personality develops. The family group operates as a very powerful influence upon behavior and attitudes and upon the values we hold. It determines to a considerable extent whether the individual's social needs are being met. Often the occupational group is second to the family as a source of mediation of our lives.

We identify ourselves as extension workers, as doctors, as engineers, or whatever it may be. Thus, instead of having to deal with a total world of millions of people, or the whole State, or the total town, we are really living our lives very largely in the family, in our occupational group and in a friendship group. Much of the meaning of life depends on the whole picture of our occupation. We are largely governed by it's ideology, what is accepted and what isn't. From this point of view, research findings are compared by the extension worker with the accepted view of the extension profession. If extension research findings lead to actions quite out of harmony with most extension workers' notion of their role and their operations - their model of the occupation - then it is very difficult to get the findings adopted. If, on the other hand, the extension research findings help them to see ways of behaving that make them fit more effectively into their picture of Extension, then it becomes an additional force for applying and using them more effectively.

Now, what does that mean specifically? It means that new information and findings can be treated in one of two ways. There is great temptation to get out findings in a dramatic way and show how wrong things are. This is the dramatic stuff that hits the front page. Only the mavericks who are unhappy about the Extension Service and want to show it up will be greatly motivated to act on findings that discredit extension work. Most of the others will resist, because their basic loyalties are affected by this attack.

The other approach is to present the findings as new materials which show us even better how to attain the goals that always have been in Extension. The effort is to interpret findings in ways that are in harmony with the basic values - the good values. There is an ambiguity about anything as general as a value system, but if you are trying to

affect people who are dedicated, it is important that the findings be interpreted to show that they are in harmony with the basic values.

I have suggested that values change. In medicine, for example, they were once proud that their students were exposed only to professors in medical schools. After they left the undergraduate school this was part of their model. Now with the prestige of research, medical schools boast about how many of the fundamental sciences they bring in, like physiology and biochemistry.

In other words, considerable change of values and notions about the model of the Extension Service could occur, and part of the effect of research findings should be to help revise the model to make it a better one. These values redefined become the basis for the revised occupational model, a model which extension workers will try to live up to. Hence, in analyzing a particular problem of how to get research findings used, it is helpful to examine the present picture of the Extension Service - this occupation, and what it means to the people. You seek answers to questions like, "Where do the values of these agents come from?" and "Where do they get their supports?" Sense the source of self-confidence and difficulties, and then findings can be fed in so as to help implement the things that people fundamentally believe in. It makes possible changes in habit patterns because they fit in with their own strong motivations to be effective members of the occupational group.

In summary, I attempted to answer the question, "What are the ways of getting findings from Extension and other social science research used by extension staff members, at two levels?" One way is to ask, "What are the methods that can be used, such as action research and so on?" The other way is more fundamental. When the first is used you will always find a certain percentage that do not respond. Then you wonder why it doesn't work with them. It doesn't work because their reactions have to be explained at a more basic level. And so we turn to the various sciences to get an understanding of the basic reasons. The psychologist, the social psychologist and the sociologist among others can give us further insights or leads.

The process is really one of the continuing social changes that I think is important because this is a microcosm of what is necessary in every occupation. The development of research that has been so explosive in agriculture is also taking place in other fields. Our people as a whole must be able, much more effectively, to use new knowledge and to change their habit patterns, or we will have antiquated medicine, antiquated law, antiquated engineering as well as an antiquated Extension Service.



## RESEARCH METHODS TO DETERMINE MOTIVATIONS AND VALUES

James A. Bayton

Before turning to our discussion of research methods to determine motivations and values it would be wise to spend some time in an attempt to clarify just what is meant by psychologists when they use the terms "motivation" and "value." This attempt at clarification of these terms must involve more than mere definition, however. We will need to gain perspective on the role of these particular aspects in the totality of psychological behavior. This is called for because the recent emphasis upon motivation research has given rise to the notion that all one needs is a motivational analysis in order to be able to understand and to predict human behavior. As a matter of fact, motivations and values are but fragments within the conceptual system needed in attempts to understand psychological behavior. We ask your indulgence, then, while we take a look at contemporary thinking within psychology as to the key variables involved and the interrelations between these variables. It is only when these have been clearly established that we can turn to the research methods.

Psychology is a field marked by a fair amount of controversy, but if there is one proposition that is almost unanimously accepted it is that all behavior is initiated through motivation. Various words are used when referring to motivation - "need," "desire," "urge," "wish," "drive" - but two of these are particularly appropriate, namely, "need" and "drive." On the one hand, the individual has needs which demand satisfaction; on the other hand, these needs operate as drives in the sense of being forces which literally push the individual into activity which he hopes will ultimately bring him to the desired satisfaction.

One of the problems in motivation theory is derivation of a list of the basic human needs or drives. There are two fundamental categories of needs - those based upon conditions within the physiological status of the individual (biogenic needs) and those arising from circumstances having to do with the individual's subjective psychological state and with his relations to others (psychogenic needs). Although there is a high degree of agreement as to the basic biogenic needs (hunger, thirst, etc.), there is considerable difference of opinion as to the list of basic psychogenic needs. If you make an intensive survey of the lists offered by the various authorities, it appears that they can be made to fit into a three-way classification:

1. Ego-bolstering needs - the need to enhance or promote the personality; the need to achieve - to better one's position in life; the need to gain prestige and recognition.
2. Affectional needs - the need to be able to form and to maintain warm, harmonious, and emotionally satisfying relations with others.



3. Ego-defensive needs - the need to protect the personality - to avoid harm, physical, material, or psychological; the need to avoid being the object of ridicule; the need to prevent loss of prestige or recognition.

Use of lists of needs often makes the unwary fall into the trap of assuming that a particular situation involves just one specific need. Actually, in most situations the individual is being driven by a combination of needs. Take the case of a farmer contemplating buying a new tractor - the new tractor can tap ego-bolstering needs in the sense of the indication of being a man of substance that such a purchase represents; the particular make bought could well involve ego-defensive needs in that this farmer does not want to be ridiculed because he could only buy the cheapest make of tractor; finally, affectional needs could come into the picture when he contemplates his wife's reaction to spending the money for a tractor rather than for her heart's desire - a remodeling job for her kitchen.

No discussion of motivation could be complete without giving some thought to the possibility that there can be a difference between "true" motives and "hidden" motives. True motives are those that actually serve to trigger behavior; "hidden" motives can be of two types. On the one hand, it seems that there are occasions when the individual is unaware of the exact nature of the drives initiating his behavior. When this occurs the individual rationalizes his behavior - he assigns motivations to his behavior which are acceptable to his personality structure. An example here might be a farm youth who claims he wants to go to the city because of the job opportunities there when, in truth, he is fleeing from conflict with his father - a conflict he cannot admit to himself. The other type of "hidden" motivation occurs when the individual actually is aware of his motives but feels he had better not expose them to public view; instead he tells his listener all sorts of lofty motivations for his behavior. This could be the farmer who knows full well that he is jealous of his neighbor's new tractor, but claims he is buying his because the design features of the latest model will make him a more efficient farmer. One of the key problems in research on motivation is developing methods which will expose these "true" motivations.

We have emphasized the initiating aspect of motivation - the fact that motivation serves as the trigger in the behavioral sequence. The next category in the sequence encompasses all those activities which psychologists call the cognitive processes - perception, memory, judgment, thinking, etc. These cognitive processes, or mental operations, have a dual responsibility. On the one hand, cognitive processes are purposive in that they serve the individual in his attempt to achieve satisfaction of his needs. At the same time, these cognitive processes are regulatory in that they determine in large measure the particular steps to be undertaken in this attempt to attain satisfaction of the needs.

For our purposes, two particular aspects of the cognitive processes must be mentioned. Under the pressure of needs, a variety of goal-objects will come into conscious awareness as being potential sources of the gratification sought. Within the context of consumer behavior, these goal-objects could be different brand names. The individual must now engage in a process of deciding which of these goal-objects has the highest probability of bringing him satisfaction of his needs. Past experience with a goal-object can, of course, play a very important role in this decision-making process.

Secondly, the individual quite often has to make decisions with respect to what the psychologists call "instrumental acts" - the acts that must be performed in order to obtain the goal-object or the acts involved in using a goal-object. An example of the former would be the acts involved in getting downtown to department stores with the traffic conditions and parking problems. The latter would be represented by the actual driving of a tractor in doing the necessary farm jobs. The point is that the cognitive processes include mental "weighing" of both potential goal-objects and potential instrumental acts.

To complete the psychological sequence we must visualize our individual as making his decisions and finally utilizing a goal-object. It is only at this point that gratification of the initial needs will or will not occur.

So far we have accounted for motivation - the initiating needs. Where does the concept of values fit into this picture? We can think of values as "organizing themes" in the interplay of motivation, selection of goals and selection of instrumental acts. The individual is a total personality and any one sequence of motivated, goal-seeking behavior must be integrated into this total personality structure. The "organizing theme" is a reflection of the total personality which is brought to bear upon the behavior sequence of the moment. The immediate behavior sequence must be integrated into the more basic and persisting value - system of the individual. When this is not achieved the individual is in conflict literally with himself.

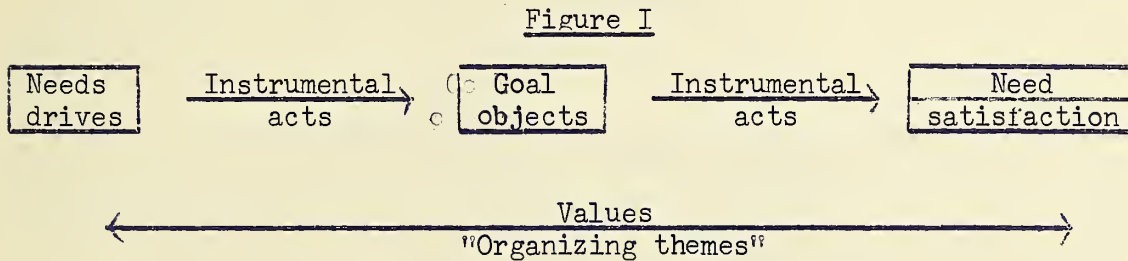
An example of an attempt by psychologists to determine a set of fundamental values or organizing themes is seen in the work of Allport and Vernon. They developed six value categories:

1. Economic - people who tend to organize their needs and goals in terms of the "money-values" involved.
2. Political - organize their needs and goals in terms of the power-relations existing between people.
3. Aesthetic - organizing theme is based upon the beauty or sensual pleasure involved.
4. Social - primarily concerned with matters of social good and social problems.
5. Theoretical - major organizing theme is the principle or theory represented by any event.
6. Religious - organizing theme is dominated by considerations having to do with "higher good"; feeling that religious principles should dominate behavior.



The role of these values can be illustrated in the following cases - the collector who admires a picture because it carries a price tag of \$100,000 (economic value type) in contrast to another collector who wants a picture simply because it is beautifully executed (aesthetic value type); the dean in a college who turns down a higher paid teaching post at another school where he would be just another professor (political value type).

Figure 1 is a simplified statement of the variables we have been discussing.



We can now turn to the methods available for conducting research specifically in the area of motivations and values.

Sentence completion - This is one of the very simple methods: the respondent is merely requested to complete a partial sentence with the first thing that comes to his mind. Note how a motivational picture begins to emerge in these examples from a study we did recently which involved, in part, women's motivations with respect to department stores. Some of the incomplete sentences used and typical completions were:

- "Shopping is - (pleasant)"
- "Women go shopping because - (they love it) (to get out)"
- "When I'm in a department store I feel - (relaxed)"
- "Baltimore department stores are - (fun to shop in)"

You might ask farmers to complete the following with the first thing that "pops" into their minds:

- "Farmers are - "
- "Farm life is - "
- "A new tractor - "
- "The Extension Service is - "

Thematic apperception type methods - The Thematic Apperception Test (TAT) was devised by Murray in an attempt to get at the basic motivations of individuals. The respondent is presented a series of pictures each of which usually depicts some scene involving one or more persons. For example, a typical scene might show a girl looking through a window. The respondent is asked a series of questions aimed at making him develop a sort of story or theme from this scene with particular stress being placed on what the respondent thinks the motivational situation is. The theory underlying this approach is based upon the phenomenon of projection - since it is after all only a picture, the motivations assigned to account for the



supposed events must come from within the respondent's own personality; they are projected onto the people in the picture. The inference is that this would be the respondent's own motivational reaction in such a situation. In its original form the TAT test is especially effective in revealing ego-bolstering, ego-defensive, and affectional need structures.

This approach to motivational analysis has been adapted to a variety of situations. Here is an example we used in a study in which it was necessary to explore motivations and values involved in spending and saving. The picture we used was simply that of a woman standing with a store to her left and a bank to her right. This is one woman's response to this picture:

She wants to spend rather than save but she knows she had better save it. If it was a dress shop, she'd be saying, "I'd sure like to buy that dress, but ... I'd better go to the bank!" (What do you think she will do?) Probably go to the bank. I know in my case if I had the money in my hand, I'd go to the bank. I always go there first and then to the stores. (Why will she do that?) That's how I overcome temptation.

She doesn't know whether to spend it or save it. (What do you think she is saying to herself?) "Do I need that new dress or should I save for a rainy day?" If it was me, I'd put it in the bank. (Why?) You never know when you'll need a few extra dollars in the bank for sickness.

Hesitating because she doesn't know whether to spend the money or bank it. (Saying to herself?) "What shall I do? Shall I buy what I want or do without? Maybe it would be wiser to put in in the bank." Not that I'd do it. (What will she do?) She's going to spend it. (WHY?) Well, I would say women are more apt to spend money. A woman has less ability to resist temptation.

Cartoon methods - These are, in a sense, a variation on the TAT approach. People are shown in a scene which is appropriate to the particular problem being studied. Unfilled blurb - spaces are provided and the respondent is asked to fill these in. This is an example we used in a study of why people buy patent medicines rather than go to a physician. Two women are standing in front of a drug-counter; one is looking at two boxes; unfilled blurb - spaces are over each. We asked this sequence of questions: "What is the women on the left saying?" "What did the other woman say to that?" "Well, what did the first woman say then?" "Why do you think she feels that way?" etc.

As can be seen, the TAT type methods, including the cartoon technique, can be adapted to almost any situation. However, these methods require highly skilled interviewers who have full understanding of the theory underlying these approaches.

Projective open-ended questions - Rather than ask the respondent in pointblank fashion, "Why do you \_\_\_\_\_?" and risk getting other than the true picture of his motivation, we can phrase the question like this,

"Some people \_\_\_\_\_, why do you think they do that?" This is still calling upon projection because the respondent finds himself in the position of assigning motivation to a mythical "some people." This procedure was used effectively during the war when the then Division of Program Surveys - now the Division of Special Surveys - of the Department of Agriculture did research to determine why people cashed in their war bonds after having them for only relatively short periods. A few years ago National Analysts had success with such an approach in a study of why people did not participate more fully in certain charity drives. It was not necessary to establish the level of any respondent's participation in order to probe into the underlying motivation.

Content analysis - With this method we have to think in terms of the complete interview - an interview which makes use of a number of open-ended questions and nondirective questions. Such an interview should produce a wealth of narrative material in its entirety. The first step, of course, is to analyze the replies to each specific question. In content analysis, however, the entire interview is treated as a unit and we search all this material for each and every revelation of motivations and values. Just as all these methods require skill in interviewing and coding, content analysis places even more responsibility on the coders. The coders must search for each meaningful statement which can be considered indicative of motivations and values. These are then classified in terms of motivational and value categories rather than in terms of the actual words used by the respondent.

We can illustrate this procedure by referring to a study conducted by the Department of Agriculture in 1951 - "Men's Preferences Among Wool Suits, Coats, and Jackets." The value categories, or "organizing themes," which influences men in the purchase of their suits were:

1. Physical comfort - warmth or coolness; ease of movement; nonirritating materials
2. Orderliness - clean; neat; wellpressed
3. Economy - concern over price; desire for good value for money spent; general usefulness
4. Pleasure - aesthetic appeal of suit
5. Social approval - desire to win approval of family, friends, and/or business associates
6. Recognition - desire for attention; status, prestige

An additional feature of this content analysis was the coupling of the values with the means perceived for achieving these values. There were four such means:

1. Color of suit
2. Style of suit
3. Material of suit
4. Fit of suit

These are some examples of the coding:

"I wanted to get a blue suit because I could wear it on all sorts of occasions."

(Value - economy; means - color)



"It (the suit) had to stay neat while I'm traveling, that's why I picked the material I did."

(Value = orderliness; means=material)

"Well, none of the fellows at work wear double-breasted suits."

(Value = social approval; means = style)

In this research every statement of value and of means in each interview was coded so that the final report not only presented the distribution of values in the male population but the distribution of the means perceived as being the way to achieve a given value. The results showed that the key value categories were economy and social approval; the primary means for achieving economy was material of the suit and for achieving social approval was the style of the suit.

Projective scaling - We have mentioned that all these methods are open to errors introduced by faulty interviewing and coding. In addition, these procedures usually consume a rather large proportion of the available interviewing time. To offset these criticisms, among others, we can use a device known as projective scaling. The following examples will serve to illustrate this procedure. They come from a recent study conducted by National Analysts for duPont and we are able to cite them at this time through the courtesy of the duPont Company. The project was an investigation of the psychological factors involved in the use of service stations to purchase a variety of automotive products. We started with the proposition that the automobile is a reflection of certain facets of the driver's personality and that the various automotive products differ in the extent to which they tap motivational areas in this personality.

Through our research we first found that there are four key motivational patterns involved in the use of an automobile:

Play need - the car is used for recreational purposes - for pleasure and amusement. The car is a source of enjoyment - a sort of adult toy.

Aggression need - the car is used as a means of aggressing against other people. Best seen, perhaps in those drivers who must be first off at traffic lights and who must pass all other drivers at traffic lights; they become angry when someone else passes them.

Conservance need - the need to take care of the car, to keep it in good running order. The need to take steps to prevent excess wear and tear, to protect an investment.

"Infavoidance" need - the need to avoid appearing to be an inferior person; the need to prevent anyone from looking at you or your possessions and concluding that you are a person of inferior position, quality, or tastes.



One of our objectives was to investigate the extent to which various automotive products draw upon different motivational patterns. The following interviewing procedure was used:

"Now, you realize that not everybody drives a car with the same idea in mind. I'd like you to tell me how you think different kinds of people feel about these products (shown list of seven products - gasoline, tires, motor oil, battery, spark plugs, lubricating grease, auto body polish). We are interested in knowing this because we think people who drive cars are better judges of other drivers than we are -- people who drive cars mainly for recreation, to take pleasure trips, and just generally amuse themselves. How would people like this feel about the importance of these products?" (Respondent ranked the seven products.) (Play need)

The respondents were asked to rank the seven products in terms of the three other needs:

"People who like to be first off at traffic lights and to pass all other drivers on the road" (Aggression need)

"People whose main concern is to keep the car in good shape and running order for a long time" (Conservance need)

"People who actually are ashamed unless their car is really nice" ("Infavoidance" need)

We next calculated the mean rank order for each product for each of the four need categories. The data for tires showed that the primary needs involved were play, aggression, and "infavoidance" (most likely the key motivation in the purchase of white-walls). The results for auto body polish were surprising as it has been more or less traditional to promote this product by appealing to the conservance need. The data revealed that the key motivation underlying this product was "infavoidance" rather than conservance.

In this particular study we took our motivational analysis one step further than is typical of most research in this area. When you are dealing with problems concerning motivation you should consider the degree of anxiety felt in the situation. Anxiety is the feeling of apprehension that one will not be able to attain the satisfaction being demanded by the needs. Promotion and marketing problems will differ as products and services vary in the degree consumers experience anxiety about them. In this research we made a distinction between anxiety associated with products and anxiety associated with the services involved with the products.

Five products were used in this part of the research - gasoline, motor oil, tires, battery, and lubricating grease. Using a paired comparisons procedure we asked this question:

"Thinking about the condition of the car you drive right now - show me which of each of these two things you would be more concerned about in terms of getting a good quality product for this car."

As there were five products the respondent had to make a choice for each of the 10 possible pairings of the products. Analysis of these data showed that the high anxiety products were motor oil and tires; gasoline, lubricating grease, and battery were comparatively low anxiety items.

We next asked this question:

"Still thinking about the condition of the car you drive now - show me which of each of these two things you would be more concerned about in terms of whether the man doing the job is doing it just right."

The five services used were: Repairing a tire, changing motor oil, putting in a battery, putting in gasoline, and lubricating the car. There were 10 pairings of these items.

The results indicated that changing the oil and repairing the tire are relatively high anxiety items. Whereas the lubricating grease itself was a relatively low anxiety product, the service of lubricating the car represents a rather high anxiety item among drivers.

In conclusion, a few words are in order about the sequence of the research process when doing research in the area of motivations and values. The first problem you face is that of determining the particular motivations and values which are pertinent to the behavior being investigated. Secondly, there is the matter of determining upon the most valid and reliable methods for measuring the motivational and value phenomena. These two problems vary from project to project. In this research area, then, it is always advisable to begin with a developmental or exploratory project designed to locate the pertinent motivations and values and to produce suitable methodologies. We have found that a series of steps involving from 10 to 20 respondents until about 100 have been studied usually is sufficient to serve these needs. With these matters settled you are then ready to go on to your large-scale sample survey.

#### Points Discussed

Herbert F. Lionberger

Dr. Bayton has done a delightful job of presenting a researchable, conceptual scheme for motivation research, and in so far as I am able to determine has given us a general account of the most used research methods for inferring motives.

However, I am still not quite sure what is properly claimed as the rightful bailiwick of motivation research. If it is committed to the examination of everything that happens to the individual and all of the influences that operate between stimulus and final response some important considerations seem to be inadequately taken into account. Notable in this respect are the factors related to the situational circumstances surrounding people when they act. These are difficult to



simulate and control in projective methods, if indeed they are; also they may produce unsuspected consequences as the situational context changes.

We may take the duPont experiment as an example. Here people were purported to use their automobiles as an outlet for aggressive tendencies. Indeed this seems to be indicated by the research data. Yet I wonder whether examination of behavior in actual life situations would lead to the same conclusions. Maybe some people habitually start late and try to gain lost time on the road. Also some people may have perfectly rational reasons for being in a hurry, at least sometimes.

In general I wonder if too little attention is given to influences which develop with and in relation to other people in actual life situations in most of the projective techniques used to study motivation. More specifically these situational factors include such things as group sanctions with respect to change, group relatedness of change, the degree to which change is regarded as a status factor, reference group norms with respect to change and individual conformity, family responsibilities, finance, time, energy, health, and so forth. I think the question here is not whether or not situational considerations are entirely neglected in motivation studies, but whether they are sufficiently recognized.

A second general consideration relates to the search for basic needs or drives which are purported to trigger reactions directed to goal objects and eventual need satisfaction. The needs required to explain the changes ordinarily investigated fall primarily in the acquired or culturally conditioned class, and are therefore highly elusive. For example, we might take a farmer who says and acts as if he is saving his money to buy a farm. Would purchase of same constitute a need satisfaction, or should we pursue the matter further to see whether other need satisfactions are involved? If we do so we may find that security, status and economic considerations are involved. These in turn may be stated in terms of need satisfaction. When then do we stop? How do we know when we have arrived at the ultimate need drive?

Probably there are two components of motivation research which are of most concern to us, in Missouri, mainly because we have never been very successful at accomplishing what we knew we ought to do. These relate to values which operate as organizing themes in action patterns and goal objects, which I understand may also include a state of affairs toward which behavior or effort is directed. Questions which we have been unable to cope with are, how can we arrive at what these values are and how can we measure their relative intensity. There is enough evidence to suggest that these values are not always what we assume them to be. I know other rural sociologists who are plagued by the same problem.



## NONDIRECTIVE INTERVIEWING

Forrest Clements

Dealing with the subject of nondirective interviewing is quite a bit like handling a porcupine. It's hard to decide just where to take hold of the beast because you know the probability is high that you are going to get stuck before the fracas is over.

I suppose it is best to attempt a definition of the nondirective interview even though it may please nobody. As I see it, a nondirective interview is one in which no answers are suggested to the respondent by the phrasing of questions, by probes, by attitude and behavior of the interviewer, or anything else. He is not forced to categorize his response into "yes," "no," or "don't know." Neither is he required to select an answer from a list of choices presented to him either as multiple choices or as items on some sort of psychological scale. In such an interview, the respondent is encouraged to talk freely and at length. This encouragement is accomplished by an attitude of interest on the part of the interviewer and by what are called "nondirective probes." These probes are used when the respondent shows signs of running down in his flow of free response to whatever topic has been brought up.<sup>1</sup> They may consist merely of sympathetic grunts on the part of the interviewer, a change of posture, or some such noncommittal question as "Anything else?" or "Would you go into that a little more?" They must be used with great skill so they do not suggest any particular kind of answer, and demand interviewers with specialized training and experience. We can come back to this point later.

There are several kinds of nondirective interviewing. Each has its advantages and disadvantages, its proponents and its detractors.

Interviews are sometimes classified as "structured" and "unstructured." There seems to be some tendency to confuse "nondirective" and "unstructured" by using the terms as though they were equivalent. This is unfortunate. A directive interview is always structured in the sense that it consists of specific questions requiring definite answers. The ordinary census interviewing questionnaire with questions about age, place of birth, education, income, number of bathrooms in house, and so on is a prime example of the direct, wholly structured interview.

The nondirective interview, on the other hand, can be structured, unstructured, or a mixture of both.

The best example I can think of to illustrate a completely unstructured nondirective interview is the first interview of a patient and his psychoanalyst. In this situation we are assuming the analyst already has the patient's medical history and all the pertinent objective facts about him. When the process of psychoanalysis itself begins, the patient usually lies on a couch to relax and the analyst sits out of his direct range of vision. The patient is told to start talking about anything, anything at all. Sometimes the analyst may record the interview on tape

or he may make notes. If the patient runs down, the analyst may use some nondirective probe to get him started again or he, too, may remain silent. In many cases, mere silence on the part of the interviewer is itself a most effective nondirective probe to stimulate further response.

This technique is highly useful in its place, but that place is almost uniquely specialized. It demands rigorous training, great skill, and abundant experience on the part of the analyst. Useful results are achieved only after a long period of time.

Other nondirective and unstructured techniques involve the presentation of such stimuli to the respondent (or patient) and getting some sort of response out of him.

One of these is the Rorschach ink blots. The respondent is shown a series of amorphous blobs of ink spilled on paper and asked to tell what each one makes him think of. There are similar tests which consist of photographs of a series of cloud formations. The respondent is asked to describe just what each photograph makes him think about. In either case, nondirective probes are used in order to get as full a response as possible from one set of stimuli before going on to the next.

In this connection, an amusing thought occurs to me. It is amazingly difficult to get a series of completely unstructured stimuli of this type, and the Rorschach ink blobs and the amorphous clouds represent about the best that has been done so far. They are getting a bit hackneyed now but hope shines for a new test of this kind. There is a 6-year-old chimpanzee in New Jersey whose name is Zippy. He likes to play with paint and brushes. His owners have provided him with these materials and also surfaces on which to paint. As a matter of fact, there is a traveling exhibit of Zippy's paintings now showing in Washington. No doubt, a suitable series could be selected from among Zippy's efforts and made the basis for a new kind of Rorschach test. So if any of you have ambitions to perfect a new research tool in projective psychology here is your chance.

Here again, but to a lesser degree, the methods require specialized training and experience on the part of the interviewer or analyst for the results to have any meaning.

All these methods, the series of psychoanalytic interviews, the amorphous ink blots, or cloud pictures, are useful in the hands of specialists in dealing with individual cases. It is highly doubtful that they can over yield results on groups which could be treated statistically.

Well, those are examples of completely unstructured, nondirective interviewing techniques. Let us proceed now to examples of nondirective interviewing which are more or less structured. By that I mean a frame of sorts has been provided within which the respondent makes his answers. They are still free responses.

One such method is called thematic apperception, or TAT. An example of this technique is a series of photographs or, more usually, sketches, which



depict some ordinary situation in as neutral a manner as possible. The respondent is given one sketch at a time to study and then asked to make up a story about what he sees. A sample sketch might show an ordinary suburban street with a man carrying a briefcase walking along the sidewalk, children playing, a woman working on a flowerbed and a car coming up the street. This is the "structure," such as it is, and the respondent makes up his own story about the scene without any direction from the interviewer. The story must account for all the elements in the sketch. As a series of such sketches is standardized, the structure of the interview increases. As structure increases the greater the possibility of using the interview on groups of respondents with consequent statistical analysis of results.

The sketch of the suburban street I just told you about is an actual card from a TAT test. To be fair, I should also give you three actual stories made up by three persons who took that test

Subject A said:

"The man going down the street is the woman's lover, They have been together inside the house. When they got through, she put on gardening clothes and went out to work in the yard as he left so the neighbors wouldn't get suspicious. And a good thing, too, because that is her husband coming up the street in that car. The children belong to other people on the block."

Subject B said:

"The man is a house-to-house salesman. He has been to the house where the woman is working on the flowers but she was too busy to bother with him. The driver of the automobile is cussing the kids playing out in the street because he has to slow down."

Subject C said:

"The man is the woman's husband. He is going down to meet the car which is the one in which his car pool rides to work. The kids are his own and maybe some of the neighbors'. She has got breakfast over, the kids out, him off to work, and now she is relaxing with her flower garden."

Need I say more to show you how such tests can reveal different personalities, latent attitudes, and possible latent behavior patterns?

Another nondirective but somewhat structured technique is the psychodrama. Here, a certain situation is described to the respondent and he is given a role to play. He acts out this role and all his gestures, words, bits of stage "business," etc., are observed and noted. This acting out of the role is his nondirected response to a situation which is structured by the original description of the circumstances and the role he is to assume.



Here is a simple example. Suppose the problem is to get some indication of executive ability. In addition to all the usual tests of aptitude, records of education and experience, the orthodox type of preemployment interview and so on, the candidates may be required to do a bit of role playing. Each one is told about some business situation which has arisen and requires an immediate answer by him as one of the chief executives of the company. After he understands the situation in which he is to act, he is required to dictate a letter outlining suitable action to be taken.

A more elaborate psychodrama involved in throwing light on certain personality traits might go somewhat as follows: The main respondent, or subject as we shall call him, is given a card which describes the role he is to play. This card says that he is at home when he receives a message stating it is imperative he be at the airport to catch a plane to take him to an important business conference. He has 30 minutes to get there, but since the trip to the airport ordinarily requires only 10 minutes he has 20 minutes to pack and get ready. As he starts to pack he discovers that he hasn't a single clean shirt in the house. They are all at the laundry. But the laundry shop he patronizes is on the way to the airport so he can stop by and pick up his clean shirts and still make this vitally important plane.

However, a second role player has also received an instruction card. He is to take care of the laundry shop while the Chinese owner is away for the afternoon. He is not to give out any laundry unless the owner has a claim check. His main function is to take in dirty laundry and write the name of the customer on the bundle in English. The Chinese owner, who knows all his customers, will then make out proper records in Chinese when he returns. All the shop records are in Chinese, which this actor cannot read, and neither does he know a single one of the customers of the Chinese owner.

These two characters meet in the shop, the subject frantic to get his shirts in time to make his plane and the other, since he does not know how to identify the claim checks, determined not to let him have any shirts.

This is the structured situation. The responses are the ways in which the subject reacts in trying to play his role.

As you can easily see, this is a situation almost sure to bring out latent meanness, resourcefulness, aggression or frustration tendencies - in fact, the whole Pandora's box. In the hands of psychologists trained in its use, the psychodrama can be quite useful as an aid in analyzing both latent and overt behavior patterns of individuals. It was used quite successfully in the last war as an aid in selecting personnel for different types of missions in the Office of Strategic Services.

Another technique but one which is in common use is the percentage completion test. The subject is given, one at a time, a list of partially completed sentences. He is required to try to complete each sentence within a given time limit. The sentences can be graded for difficulty and can be so designed as to reveal personality or latent behavior traits. The subject's

score is the percentage of completion of the sentences. Here, again, the response is not directed, but the situation is structured to a certain extent by the nature of the incomplete sentences with which the subject has to operate.

Then there are the word association tests with which I'm sure you are all familiar. The subject is given a list of words, one at a time, and required to say the first word that pops into his mind. The nature of the response words and the time taken to respond are the materials with which the analyst has to deal.

Still another method consists in describing a situation to the respondent and asking him what he thinks someone not himself would say, think, or do about it. The response is free and nondirected but the situation is structured by the description. The idea behind this device is that although the subject is asked to describe how he thinks someone else would react, he actually is describing how he, himself, would respond.

I will mention one more technique of this type which has been used with considerable success. This consists of a series of cards, each one bearing a simple cartoon. There are usually two characters in each cartoon. One of them has said something which is written in the usual balloon coming out of his mouth, familiar to all cartoon readers. The balloon for the other character is drawn in but contains no words. The subject is required to supply the words he thinks most appropriate to fill the vacant balloon.

All these methods and devices I have been discussing - the Rorschach ink blots, cloud forms, thematic apperception or TAT, psychodramas and role playing, percentage completion, word association, and getting the subject's opinion about how someone else would react in a described situation - are examples of what are called "projective techniques." It may not be a good term, but it is firmly embedded in the literature and is probably here to stay. The one thing they all have in common is that, theoretically anyway, they require the subject or respondent to "project" himself either consciously or unconsciously. And, as I hope you noted as I went along, they can range from just about as unstructured as you can get as in Rorschach cards to quite highly structured situations. Yet all of them are nondirective in that they permit a free response. In greater or less degree, however, they require skilled and specialized personnel for their successful use. Their greatest use so far has been in studies of motivation, a subject which Dr. Bayton discussed for you yesterday.

I would like to turn now to some nondirective interview methods which are likely to be more useful to you in your own work.

At one time what is called the "free story" technique was very popular among social case workers, clinical psychologists, sociologists and social anthropologists. It is still used in these fields but is being supplanted to a considerable extent by the "focused" or "depth" interview.



In the "free story" method, the interviewer explains the subject to be covered and then encourages the respondent to talk about the subject. There are no direct or formal questions but there is much use of non-directive probes to keep the respondent going until he has been pretty well wrung dry on the subject. Except for the explanation of the subject and the open questions needed to get the respondent started, the free story method is quite unstructured. For this reason, the interpretation of results is almost wholly subjective. These results are usually a mass of notes which contain chance impressions usually biased by the interviewer's own opinions. When the same interviewer uses this technique on a sample of respondents, he usually emerges with a series of subjective impressions about the reactions of the group as a whole to whatever the subject of the project may have been. When reactions to various items are not mentioned in the interviewer's report, it is impossible to know whether this was because of failure to record or failure of the respondent to mention the items. It is almost impossible to quantify the results of the free story technique. Furthermore, a second interviewer talking to the same respondents at another time is likely to obtain and record quite different impressions of their reactions than did the first interviewer. Yet, in spite of its faults, lack of reliability in the sense that different interviewers hardly ever get the same results on the same respondents, and the fact that there can be little or no statistical treatment of the cases, there are many people who cling stubbornly to the free story method.

Back in the 1930's when many new policies affecting farmers and rural families were being tried out by the Department of Agriculture, the free story technique was the favored way to find out what farmers thought about the Department's activities. A staff of interviewers was maintained. These were mainly former county agents or others with some sort of background in agriculture or extension work. They traveled about the rural areas of the country talking informally with farmers on whatever subject the Department wished to obtain reactions. Ever so often, they would return to Washington and report their impressions. It seems unbelievable today, but at the time these reports were regarded as a good measure of rural opinion and many a direction shift in policy was at least partly inspired by these impressionistic reports.

The next, and the last, type of nondirectional interviewing I shall discuss is the focused interview sometimes called the "depth" interview. Personally I have always felt that the term "depth" applied to this kind of interviewing is a misnomer and should have been reserved for the type of interviews done by psychiatrists or clinical psychologists which really do probe deeply. Yet, compared to the usual type of opinion and attitude study done today, the focused nondirective interview may justify the designation of depth.

The so-called depth interview is structured in that it uses a formal questionnaire. These questions all bear on some aspect of the subject being studied and the interviewer is not allowed to make up any new questions or to omit any except where they clearly do not apply. All interviewers use exactly the same questions and are trained in the use of the questionnaire before they go into the field. Thus, results from interviewer to interviewer are comparable and interviewer variance is brought within reasonable limits. The technique can be used on large samples of respondents



and the material of the responses treated statistically to produce a picture of the sample group as a whole.

The questions in the depth interview are what are called "open" or, rather needlessly I always thought, "open-end."

The "open" or, if you insist on being tautological, "open-end" question is one which does not demand a "Yes" - "No" response or a choice of responses picked from a definite list. The respondent is free to answer it any way he likes and use whatever phraseology he likes. He is encouraged to talk at length in answering each question, nondirective probes being judiciously employed to get as full a response as possible out of him. The interviewer records these answers as nearly verbatim as possible. This is important and in some cases mechanical recording devices are used to make certain everything the respondent said actually is on record. Much of the skill of the interviewer here consists in not allowing the respondent to drift away from the subject into something quite irrelevant. When he does this, as he almost invariably will, the interviewer must bring him back on the track again. Furthermore, he must do this without adding anything to the already structured situation. It takes a good deal of experience in handling open questions to do this without introducing an unwanted directional bias into the situation.

A depth interview may run an hour or a little longer and all the questions should be concerned with some aspect of the general subject under study.

Here are some examples of open questions and nondirective probes:

1. What do you think about the Extension Service?
2. Would you tell me more about that?
3. I see, anything else?
4. How do you feel about the county agent here in your county?
5. How is it you feel that way?
6. How about the home demonstration agent - what's your ideas about her?

As in all questionnaires, open questions must be carefully phrased to avoid the introduction of bias and must be framed in words the respondent can understand. This seems a simple point but it is too often ignored.

In actual practice a depth interview usually consists of a mixture of specific, directed questions, multiple choice questions, scale questions and open questions with probes. However, this gets us into the matter of questionnaire construction, which is not my topic at this time.

In the same way, the quantification of the responses to open questions is a whole subject in itself. I will only say here that in the content analysis, the analyst reads through the replies looking for the concepts which have been expressed. The same concept may have been stated in many different ways by many different respondents. This makes

no difference if the concept can be abstracted from the often rambling, colloquially expressed answer recorded by the interviewer. These concepts are the categories of punch card codes and can be machine tabulated just as well as any Census sheet after the coding has been done. However, the coding of concepts abstracted from the free answers to open questions is a job for people trained in and experienced in that work. It is a separate subject and cannot be further dealt with here. I once wrote a 48-page manual on this coding process and stillhfebeit ought to be supplemented by on-the-job instruction to produce an adequate coder for open question responses.

The type of interview I have just described, using open questions in a structured questionnaire on scientific samples of respondents with trained interviewers, came into use by the Department of Agriculture early in the 1940's. It quickly supplanted the old free story method which had been in use and is today an important part of the Department's market research among consumers. During the 10 years from 1944 to 1954 when I was with the Department we did many studies using this method along with direct, structured-response questions. Among those which depended most heavily on the use of open questions and so-called depth interviewing and which I directed there were three which stand out in my memory.

One of these was done on spring pig producers in the corn-hog belt. It attempted to get at the attitudes of these farmers toward production control - a hot subject if there ever was one for farmers. The interview ran well over an hour and consisted almost entirely of open questions covering every conceivable aspect of the subject as applied to spring-pig production. The content analysis of all this material took a long time but when the report was finally ready for publication it proved so shocking to orthodox economic thinking in the Department it almost didn't get published. Classical thought held that price was the sole determinant. If the farmer was going to get a good price for his hogs he would increase his production; if the price was going to be low, he would curtail his production. So all you had to do to govern production was to manipulate price. It was as simple as that. The report showed, however, that such was by no means true. Price was important but seemed foremost to only 13 percent of those farmers. In contrast, 60 percent placed the physical equipment of their farms and availability of labor as most important while 58 percent spoke of feed factors other than cost of feed when talking about the things they considered in planning their production. This study was titled "An Exploration of Factors Motivating Hog Farmers in Their Production and Marketing." It was a publication of the old Bureau of Agricultural Economics and appeared in August 1947.

The second study was done for the old Farmers' Home Administration and involved the attitudes of borrowers in the South and Midwest toward the tenant-purchase program. This research was not done for publication but for administrative use. It formed the basis for regional conferences all over the United States with F.H.A. administrators which I understand resulted in improved functioning of the whole tenant-purchase program.

The third project involved men's attitudes regarding coats, suits and jackets, especially those made of wool. This was a straight market research



job but, unlike most such studies, attempted to go more deeply into the underlying factors which motivate a man when he goes to buy one of these garments. The questionnaire was a depth interview in the usual sense with many open questions and was unusual in that it was applied to a large sample - about 5,000 men as I recall. When the report was published the Men's Clothing Manufacturers' Association of the United States called it one of the most significant studies that had ever been done involving their industry.

I have cited these three studies, not because they were done under my direction, or to brag, but to show you that when you do use some of these techniques the results are often much more meaningful than those obtained by the usual cut and dried polling type of survey. Furthermore, they are recognized as such even when, as in the case of the hog farmers, the findings turn out to be painful to some people.

I believe now I have covered all the main aspects of nondirective interview techniques even though the discussion has had to be sketchy. But perhaps what I have said will help you to a better understanding of the field and you can go on from there. I also hope I haven't made it sound too difficult. Given the usual college background in the social sciences there is no reason why a person cannot learn to apply most of these techniques and interpret the results with the aid of specialized training.

I hope some of you will obtain this specialized training in some of these methods and try them in your own work. Of course, you will have to have not only training but experience as well. The only way to get that is to work in the field. Do this first in association with someone already competent in the handling of these techniques; then, try out on your own. If any of you do tackle such a project, I wish you all success.

In closing, however, I think there is a facet of this whole subject which should be pointed out to you. As you know, most of the so-called projective techniques as well as depth interviewing were originally developed for therapeutic purposes in the treatment of mentally disturbed persons. But they can also strip the psyche of normal people pretty well naked. By normal people I mean those like you and I who so far have escaped the psychiatrist, the mental institution, or the police. As the methods are refined and new ones added, they may tear away the last shred of the last veil from the inmost core of mental privacy.

These techniques have been and increasingly are being adapted to market and motivation research. They are becoming the tools not of healers, but of hucksters. If they were employed merely to help sell gadgets, to create an artificial obsolescence of what ought to be durable goods, I suppose no particular harm would be done. But these methods can also be used to help sell and implant ideas which may be good or bad. The techniques themselves have no partisanship. They will work equally well for dictators, demagogues or saints.

Dr. Bayton has described for you some of the basic psychological and biological needs which are involved in motivation and consequent behavior.



These are founded on anxieties, aspirations, frustrations, aggressions and so on. All of us have these things but we are hardly ever conscious of their actual psychical or neurological operation in molding our behavior in any specific situation.

Now let's take a few examples to show how all this works in the market place. We all want emotional security. For most men, and particularly United States men, this means mamma. Suppose a manufacturer wants to sell some kind of home freezer gadget, most of which are bought by men. Should he put stress on its mechanical perfection, on the details of the compressor, the motor and so on? Not so. Instead he will picture it as a never-ending source of food, secure in your own household, always beautiful, always ready to come to your rescue when you are caught short. In other words, an implicit substitute for mother.

Then, there is ego-gratification. Does a farm machinery company want to sell a tractor or a bulldozer to a farmer? Never mind whether or not he needs it. Don't waste advertising space or TV time on the engineering specifications or even what the gadget will do. Rather, present the powerful mechanical beast snorting, roaring, throwing up earth and generally raising hell, but with you, the prospective buyer, firmly in control, exerting your mastery over the ferocious monster.

If you want to market a successful pastry mix, don't make it complete, as you could easily do. Instead, let the housewife add an egg or a cup of milk. This helps to satisfy her need for a creative outlet and makes her happier by relieving an inner frustration.

Really young men when the sap is running high don't have any particularly strong desire for new cars. They are quite happy to get an old one and hot-rod it up. But older men? Give them a new car every year with higher and higher horsepower. Why? To alleviate their hidden fear and anxiety concerning failing sexual potency and help satisfy their unrealized need to compensate for waning prowess.

Of course, these examples are trivial in themselves and rather ludicrous. But the same techniques of which these illustrations are the result can also be used to sell political or economic or social or moral ideas. They make possible manipulation of the mass mind and mass behavior. In the hands of unscrupulous or cynical persons with the means to carry them into action, these techniques and others like them can be as dangerous to the welfare of humanity as atom bombs.

I remember back in 1944 attending a bull session among a group of psychologists here in Washington. This subject was tossed around all evening. The consensus was that any politician with adequate financial backing could use these techniques to keep himself in office the rest of his life. Moreover, he could generate enthusiastic response for any ideological nostrum he and his sponsors wished to peddle. As a theoretical exercise, we even went so far as to map a general outline of such a campaign. None of us took it seriously then: it was just a game we were playing in a wholly imaginary set of circumstances.

But, as I said, that was back in 1944. Now it's 1957.

As I review certain fairly recent events involving political controversy, law and ethics, economic gospels, and the use of mass media for communication, it seems like more than 13 years have gone by since that evening back in 1944. I can't tell whether the clock is really ticking faster or whether I feel that way just because I'm getting older.

#### A Few Suggestions for Reading

Bingham, Walter Van Dyke, and Moore, Bruce Victor; How to Interview. Harpers, 1941

Lindzey, Gardner; Handbook of Social Psychology, Vol. I, Theory and Methods. Addison-Wesley Publishing Co., Cambridge, Mass., 1954

Parten, Mildred; Surveys, Polls and Samples. Harper, 1950

The Handbook and Miss Parten's book both contain exhaustive bibliographies.

#### Principal Journals?

Public Opinion Quarterly  
Journal of Applied Psychology  
Journal of Marketing  
American Journal of Sociology

For a thoughtful, stimulating and eminently readable appraisal of the mass application of results of nondirective methods today, see:

Packard, Vance, The Hidden Persuaders, David McKay Company, N.Y. 1957.

Points Discussed

Frank Alexander  
Harold Capener  
Glenn Dildine

The discussion revolved around several points brought out in Dr. Clements' talk on nondirective interviewing techniques. One discussant brought out that we need to find out what the basic needs system is like and what the value system is like. He referred to an experience of one of the young research workers in Iowa who used the TAT with farm folks. He had a picture of a scientist and a farmer looking out over a farm scene. This presented the opportunity for them to enter into a discussion about the farmer's reaction to the scientist; where he saw the scientist making the contribution in terms of the research that he was producing and its usefulness to him as a farmer. It unlocked the potentialities of images that farmers held about this kind of thing that the usual kind of questioning never brought out.

There are at least a half dozen of these methods using essentially the same principles. They are all just variations of a technique to unlock the dam of ideas, notions or feelings. The problem or the skill involved is simply to unlock the dam and then get out of the way so as not to dam it up again.

It seems to me that our real problem hasn't really been dealt with either yesterday or today and this is understandable in terms of the time. It is the kind of framework we are seeking to study, that is, what are the objectives of the research study that we may be attempting to set up.

Dr. Bayton illustrated this rather nicely yesterday in the duPont study, where they had certain objectives in mind and because of these kinds of objectives they then developed the notion of the particular kind of data that they wanted to get, the particular system of analysis that they were going to use and the particular use of the findings they were to make. This is the real key or problem in using some of these techniques. What are the objectives of our study, what are the purposes of the research design and what findings do we need to get, what kind of data are we really looking for that will give us the evidence we need? What does this suggest to us in terms of the kind of interpretive analysis that we make? I would be interested in your commenting on this in terms of the kind of research we are concerned with here involving essentially rural people.

Another discussant said, as I listened both yesterday and today, one thing that struck me most strongly was the continued emphasis both by Dr. Bayton and Dr. Clements on the technical complexity of this job, of the training it requires in developing and analyzing, and in using the results of this kind of research. Dr. Bayton said to call on your college psychology department.

The framework for analysis for constructing these tests depends almost completely on a dependable valid testable model for human motivation and



the outward behavior which results from intermotives in people. This whole business of to what extent do we as research people and especially as educators have a dependable picture of the way people are, the complexities of internal human behavior which controls outward patterns of behavior, is a prerequisite.

Another important point was the continuing emphasis on the analyst's own preoccupations; the precepts that research persons, interviewers or developers of tests bring to the situation that often blinds them completely to some things. I think there are implications for the kinds of practices we need as professional people - the kinds of expertness we need as we attempt to understand this kind of approach and the various techniques for applying it.

The things that Dr. Bayton talked about yesterday were concerned much of the time with the huckster approach in attempting to use present motivation, present preoccupation, present mental sets, present behavior patterns of people to get them to buy something, to do something or to modify some practice. It will be more in keeping and, therefore, more profitable if more is known about their internal workings and, therefore, their predictable behavior.

To use these techniques effectively in our work which combines research and teaching in Extension with emphasis (as we have been seeing it in the last few days) on our obligations as teachers using the research tools as teaching devices, we need to be pretty clear on our ethics, on our purposes and on our needs as people in this process. Therefore, we must approach these techniques and the understanding of people from a different theoretical basis and especially a different ethical basis when we concern ourselves with basic changes or improvements in the present self picture. The same is true of changing patterns of behavior. We cannot just take advantage of these for our own enjoyment or for our own profit as professional people. We are deeply concerned with helping people to develop more adequate understanding, to see their world more effectively, to want things which are effective in this world, and to find ways to obtain these ends for themselves. This says we must use the tools carefully and to these ends. When we get at depth analysis, and we will in this process, we need to be guided by these aims and share the ethical principles that Dr. Clements expressed when he said, 1987 is not quite as far away as we think.

Clements: I don't remember all the questions but you can ask them again if you want to. One point that struck me from the first commentator was his suggestion that these things, in particular depth interviewing, can be used to develop a more structured type of interview which does not require such specialized training for the interviewer, the coder or the analyst. That is common practice in marketing research today. You can take a relatively small sample of people to open the whole thing up. As Dr. Bayton said yesterday it is an idea hunt, from the results of which you can make your questionnaire with simple questions eliciting answers that a person with any experience at all in coding for punch card machine tabulation can handle.

Another commentator asked about specifications and objectives for the plan of a project. The very first thing in any project is to draw up a formal list of exactly what it is you want to know. I know that's hard work - all planning is. Make the list detailed - run page after page. It is the very basis of the eventual questionnaire whatever type it may be.

First find out what it is you want to know, what kinds of information you need; then pick out the tools which will best provide that information. If you have a lot of experience you can do that on the basis of experience. If you haven't the experience, try out some of the different tools and find out which ones work best for the particular things in your specifications of data.

The other points about the bias of analysts I am not sure I understood correctly. Let's call it bias on the part of the analyst by bringing in his own preconceptions. He may project himself in his interpretations. The only cure for it, not a complete cure of course, is formal training which enables him in time to put into the background or isolate as much as is psychologically possible his own personal biases in regard to any particular kind of response that may come out. It requires rigid scientific thinking. You've got to compartmentize your thinking.

Now to answer the question about the kind of experience necessary for the use of these methods. Well, I don't want to recommend that you just go to your psychology department because not all psychology departments have a staff familiar with these methods, except by reading about them. Get training from people experienced with one or more of these methods. After you have become theoretically familiar with them and helped analyze the results of other people's work, get experience in the field under the supervision of your trainer or professor. With your educational background, maybe a semester would be enough to make you pretty good on such a thing as TAT, sentence completion or word association. Rorschach may take a little longer but the bias of the analyst is present in interpreting Rorschach tests because I have never heard two of them come out the same on the same ink blot.



## ANALYZING AND INTERPRETING STUDY DATA

Jewell Fessenden  
Ward Porter

We have attempted to gear this discussion to the level of most of our extension workers who are very competent in subject matter but somewhat inexperienced in the analysis and interpretation of research material. Therefore, the points we hope to cover will necessarily seem quite elementary to many of you. However, we feel that some of them may be helpful from the standpoint of training other extension workers in the analysis and interpretation of research data.

First, we need to think of some definitions, even though they may not be stated exactly as you would state them. These definitions are essentially the same as we find in much of the literature on this subject. We will briefly define analysis as the ordering of data in such a manner that they yield the answers to research questions. Or in other words, taking something from a mass of data that we can take hold of or catch on to - or breaking a whole into component parts. Sometimes the interpretation may be putting all of the component parts back together again. On the other hand, it is the purpose of interpretation to search for the meanings of the answers - the causes, the whys. Interpretation leads to the establishment of explanatory concepts. We are all aware that both analysis and interpretation govern the entire research process and are interwoven into the research design from its very conception. It is not always possible to draw a complete distinction between analysis and interpretation.

When does one make plans for the analysis and interpretation of data? A plan for analysis needs to be well thought out by the investigator when a research project is developed. Instruments for collecting data must provide for the information needed for purposes of analysis. No amount of analysis can extract from data factors that are not present. Nor is this to say that we can make final and complete plans for analysis. The researcher always must look for new concepts as observations are made. However, analysis must precede interpretation, even though there is some overlapping.

It is helpful to write out specific plans and to prepare work tables in advance. But we would like to emphasize the fact that sometimes our administrators and coworkers have to understand that time and other resources must be provided for research. In this connection, a calendar of work, outlining the jobs to be done, the time required, and responsibilities, is helpful. These are but a few of the points to consider and time will not permit an exhaustive discussion of the subject. We have thought of this process of analysis as putting data through a mill, or to quote someone: "putting in information and taking out intelligence."

This reminds us of a State specialist recently visited by a staff member. She had been working very hard on a survey for about 3 years. The staff member found her in a state of frustration. Looking at a



stack of questionnaires, she said: "Oh, I have so many questions to ask you. We have worked so hard in getting all of this information. We have added, subtracted and multiplied. Here it is, but we don't know what to do with it."

Now this is a very common problem that we all may have encountered. We would like to add, however, that it was a very gratifying experience to help this specialist through the process of making the data useful for her.

We have chosen to base the remainder of our presentation on the theme, "Suggested Guides for Analysis and Interpretation of Data." You may not agree with the terminology that we use. We will use the positive approach and then inject a few illustrations of some common errors that we have found.

### Don't Overgeneralize

The first guiding principle we would like to mention is, for want of a better term, generalization in the interpretative process. By that we mean the process of interpreting results in terms of some population or universe, or group of people. Usually it involves drawing inferences from samples in the direction of some universe or population group. Now this principle, we have found, is frequently violated or abused in some degree: for example, inferring that because something seems to be true for a sample of respondents the same is also true for a larger universe beyond that from which the sample was drawn.

In a county not too many years ago the home demonstration agent was seriously interested in health problems. She was highly competent in subject-matter but she had had no experience or training in the area of research or evaluation. She had planned a health survey in which the members of home demonstration clubs were interviewed. When the data were tabulated, she promptly applied the findings to the county as a whole. Most of us would recognize that there are some dangerous implications in doing this. For one thing, the National Home Demonstration Study that many of you are involved in gives us plenty of evidence to the effect that members of home demonstration clubs differ in many respects from nonmembers.

Here is another instance where this problem is apparent. Someone conducts a mail survey and has a relatively low rate of response, and then blithely applies the results to the total population or the total universe from which the sample was originally drawn. This is frequently done on the assumption, apparently, that the nonrespondents would react the same way as the folks who replied. Now unless you have some evidence to suggest the comparability of both groups, it would seem quite dangerous to generalize to this extent.

### Define Terms and Concepts

The second principle we would like to mention briefly is what we refer to as the definition of terms and concepts. Now this is pretty "old hat" to everybody here; but in working with others we must impress upon them the importance of adequate definitions for certain concepts and terms that are referred to in a schedule. Here are three such terms that are in relatively

common use. One is "farming." What is "farming?" Another would be "income," and we will have an illustration on this very point later on. What is "income?" Is it net? Is it gross? Is it income after withholding? Is it income before withholding? And then the word "town." Do you live in "town," for example. You can all think of numerous terms that would need some definition.

The danger resulting from not adequately defining concepts is particularly apparent when you make comparisons: for example, when you are comparing a farm group with a nonfarm group in terms of income. There is probably a tendency for each of these groups to think of income in a somewhat different way.

Another problem that we have all encountered involves comparisons over a long period of time where the concept of farming is basic. For example, the Census definition of farming has changed several times in the last 25 years and some of those changes might have to be reckoned with in making comparisons.

#### Use Appropriate Calculations

Another rather important area, but one that we are going to treat rather lightly, is this matter of simple, mathematical calculations. Let us give you an example of the effectiveness of a simple, a very simple, calculation: that of percentage. If we say, in comparing two groups, that 67 out of 179, compared with 30 out of 70, used a certain practice, we imagine that most people would go through some mental summarizing or ordering process. And it is likely that many of us would think in terms of percentage. If we say 37 percent as compared with 43 percent, it seems to be more meaningful.

Now there are some dangers of misusing percentages. There are many ways you can misuse or miscalculate the percentage. The obvious one may be the most common, which is to use the incorrect base for computing the percentage. There will be illustrations of this further along in our discussion. For example, you have to decide whether to use the total sample as a base or the total of those answering a given question.

Another mistake frequently made is to add percentages regardless of whether or not the categories are mutually exclusive, and sometimes when each category is not from the same universe.

Another area of calculation which is often helpful is what the statistician refers to as measures of central tendency, or simply averages. Now we all know that this approach is very useful in simplifying and summarizing the results of extension studies. The three main types of averages which we most frequently use are the mean - the arithmetic mean, or what most of us refer to as the average; the median; and the mode. We know that most of you are familiar with some of the advantages and disadvantages of each of these. But it is probable that the median and the mode are not familiar concepts to the folks we are thinking about here today.



Now, here again there are some frequent misuses: For example,

1. Using the simple arithmetic mean, or the average, where the dispersion or spread in the data is very great.
2. Closely related to this is the use of the simple arithmetic average, where you have one or several extremes at one end of the array or distribution. In such instances, it might be well to use the mode or possibly the median.
3. In connection with averages, many of us feel that the mode might well be used more often in extension studies. It is a simple concept and one that probably comes closest to what most people think of when they say, "on the average."

### Measuring Dispersion

Another type of calculation which should be brought into extension studies has to do with range or dispersion of data. There are, as we all know, some simple down-to-earth measurements of dispersion in addition to some other more complex methods and we will be concerned here with the simple. One thing that the use of such simple measures of dispersion does for us is to keep us from getting in over our depth. We believe there is one person here from Tennessee that might be able to verify this. As we understand it, a Congressman, back in 1946, in the U. S. House of Representatives, is reported to have said that the average depth of the Tombigbee River in Tennessee, in dry weather was only one foot. A simple arithmetic average. Now before anyone attempts to wade it, he would be well advised to know something about the dispersion around the mean.

Another use of the simple measures of dispersion and range is in isolating segments of the clientele or the population that may require special programs or special types of assistance. We have already implied still another use in connection with averages: that is the use of a measure of dispersion in place of the mean in summarizing data where the dispersion is very great. Let's cite an example in a rural development context. In a county where you have a considerable range in farm income, it would be a mistake to use average farm income if you were thinking in terms of the low income problem.

The simple techniques that we have been talking about are evident to everybody. They consist of a simple numerical distribution, and the percentage distribution of replies. Here again, though, there are some possible misuses: for example, a poor selection of class intervals in a distribution. The categories that you decide on and make use of may not be meaningful in terms of the local situation.

### Interpret Objectively

For the next topic, we couldn't think of an adequate descriptive term; so for want of a better one we have called it objectivity in interpretation. We must, of course, have objectivity throughout all phases of a study. But there seems to be some tendency among inexperienced folks to assume that once the data have been collected, a



simple tabulation is all that's necessary, without any regard for questionable replies.

We are reminded of a study that was made back during the depression by one of the government agencies. It was a study of homeless men. Among other questions, they asked: "Are you married, single, divorced, etc.?" The vast majority of the homeless men said they were not married. In going through the schedules, someone who was applying a little objectivity, began to wonder about that. It seemed a little curious that almost all of these men were unmarried. So a spot check was made and it was found that a significant proportion of the men were actually married. The question they used in the spot check was: "Where does your wife live?" Well, that person was using objectivity in interpreting the replies.

In connection with objectivity in the interpretive stages of a study, I am going to mention another area that Jewell will touch on later in the discussion - a very important one. This involves reporting cause and effect relationships where even the slightest association exists. In doing this, there is frequently little, if any, attempt to control the many possible relevant factors that impinge on this particular situation.

#### Plan Tabulation in Advance

There is one other factor that is extremely important to the analysis and interpretation of data. This is the advanced planning of tabulations. In other words, it is essential, if you are going to have meaningful interpretation and analysis, to do some advance planning of your tabulations, and not wait until after the data are in. Yet we find that inexperienced people do tend to wait until the horse is stolen - until it is too late.

Let us cite an example to illustrate this point. In this instance, a questionnaire was designed to provide information relative to ages of women enrolled in home demonstration clubs. The tabulations were planned in line with desired interpretations. In the first two tables that follow, we will illustrate different interpretations. Incidentally these tables were selected from different studies for purposes of this discussion.

The first table shows a frequency distribution by age groups of women enrolled in home demonstration clubs.

Table 1 Ages of club members

Age Group	Number	Percent
19 years or under	2	.3
20 - 24 years	18	3.0
25 - 29 years	33	5.4
30 - 39 years	132	21.8
40 - 49 years	155	25.6
50 - 59 years	132	21.8
60 years and older	134	22.1

The second table illustrates an interpretation based on a comparison of the age distribution of club members and of women in the State.

Table 2 .. Percentage of women by age groups in State and in home demonstration clubs

Age Group	Percentages in State	Percentages in clubs
19 years or under	2	- *
20 - 24 years	13	3
25 - 29 years	13	5
30 - 39 years	24	22
40 - 49 years	17	26
50 - 59 years	14	22
60 years and older	17	22
Total	100	100

\* Less than .5%

There are other interpretations of these data on age groups of women that may have significance for programing. For example, how many women are of the age most likely to have very young children at home, or perhaps under 30 years of age? What are the potentials for leadership so far as age is concerned? Perhaps the proportion of women 30-49 may be the significant group for leadership purposes.

The point of the foregoing illustrations is to emphasize the importance of planning tabulations that would make the desired analyses and interpretations possible.

#### Objectives as a Basis for Interpretation

We can now move over into the second broad area of our discussion - that is specific approaches to interpretation. Since much of our evaluation is in terms of program effectiveness, we shall discuss interpretation and analysis in the light of program objectives or teaching objectives.

This is an important approach to interpreting research. For this purpose, we are accepting the definition of program objective as some specific behavior change that is desired. If you will refer to table 3 you will note that the desired behavior change in this case was the constant feeding of phenothiazine and salt. Twenty-nine percent of the farm operators selling lambs were using the recommended practice. But there is possibility of misinterpretation here.

Table 3 .. Use of phenothiazine and salt on farms in sample and in X county, 1950

Degree of use	Number of farms (sample)	Percent of farms (sample)	Number of farms (county)
All farms selling sheep and lambs	118	100	654
Feeding constantly	35	29	190 <u>1/</u>
Feeding occasionally	55	47	307 <u>2/</u>
Not feeding	28	24	157 <u>3/</u>

1/ 2/ 3/ Estimate based on sample percentages

Let's look at table 4 for a moment. In extension research we are frequently concerned with finding out how successful we are in reaching the potential clientele. You will notice that in the sample there were 202 farmers.

Table 4. Number and percent of farms in sample and in X county selling sheep and lambs in 1950

Type of farms	Number of farms (County) 1/	Percent of farms(county)	Number of farms(sample)	Percent of Farms (sample)
All farms	1,114	100	202	100
Selling sheep and lambs	654	59	118	58
Other	460	41	84	42

1/ Based on 1950 Census of Agriculture

Sometimes a mistake is made in estimating program effectiveness - getting back to the misuse of percentages - and use of the wrong base. In this case, 202 might be used - instead of 118 - as the basis for computing percentages using phenothiazine and salt constantly. That would have a rather serious effect on the estimate of program effectiveness because it would include farmers who were not selling lambs. So, in working with inexperienced people, we must realize that they may overlook the potential audience that Extension is trying to reach in any given instance.

Let's look at table 5 and think a moment about teaching effectiveness from two different points of view.

Table 5. Broiler practices adopted by 4-H Club members in X county (Number members raising broilers - 75)

Practices	Number	Percent
Members attending meeting where information was given	50	-
Allowing 1 square foot floor space per bird	30	60
Using thermostatic controls	20	40
Keeping 95° temperature for first week	40	80
Pretesting brooders 24-48 hours prior to use	45	90

First of all, we must frequently consider the opportunity for use of whatever was taught. How many people really could use this information that we are thinking about in this particular program? In this case it would be the 75 4-H Club members who raise broilers. (See table 5.) In this particular instance, the county agent wanted to know something



about the effectiveness of teaching 4-H Club members who were enrolled in a broiler project. So that's the first base we have to start with.

Then the next point that we want to consider is the group who actually received the information. In this case, all of the boys did not attend meetings at which information was given. So we find that 50 received the information. To take just one practice, that of allowing one square foot of floor space per bird, we see that 60 percent of those who received the information had adopted the practice.

Sometimes in evaluation, people ignore this matter of exposure. They forget about it in their interpretation. For example, in this case (table 5) they forget that only 50 of the 75 4-H Club members with a broiler project actually had been in a position where they could receive information through meetings. You can see what would happen if, again, you used the wrong base for calculating percentages - all 75 of the Club members enrolled in the broiler project. Instead of 60 percent that were applying this practice of allowing one square foot of floor space per bird, you would end up with 40 percent - somewhat less impressive, as well as unrealistic.

One other point here, too, going back to something we have already said, there is a danger in asking certain types of questions without sufficient definition of terms and concepts. For example, what is adequate floor space for a bird? You notice this is defined in terms of one square foot per bird. In asking about that in a schedule, we would certainly want to make it perfectly clear to the individual, somehow or other, so that the replies would be meaningful.

#### Interpret in the Light of the Situation

The next approach to comment on is analysis in terms of status or situation. Sometimes we find this type of analysis very useful if we want to establish benchmarks from which to measure progress. If we want information merely for program planning purposes, this approach serves a useful purpose. Again, we have a simple illustration of this in table 6. In this particular case we have a simple distribution of club member families by certain income levels. The information on income can also be interpreted from another angle that may be meaningful, that is, in terms of low, medium or high income. But we would have to point out here that a definition would need to be made of what is low income, what is high income, and what is medium income for that particular area from which the information was collected. Low income in one area may be high in another, and so on. So this information on income would have to be interpreted in such a way that it would have meaning to the area or group which it concerned.

Table 6. Income levels of club member families.

Total number of replies to this question 576.

Income group	Number	Percent
Less than \$1,000.00	182	31.6
\$1,000 - \$1,499	63	10.9
\$1,500 - \$2,499	89	15.5
\$2,500 - \$3,499	86	14.9
\$3,500 - \$4,999	71	12.3
\$5,000 - \$6,999	55	9.5
\$7,000 - \$9,999	17	3.0
\$10,000 or over	13	2.3

We mentioned income as one of the terms or concepts that is frequently referred to in extension studies in one form or another. In dealing with a farm group, income could be interpreted by respondents as gross income including all the costs. An employed nonfarm group might interpret income as take-home pay, or they might give you their salary before withholdings. In any case, definition of what is meant by income is very important.

### The Comparative Approach

Another approach that can be very helpful in the interpretative process is that of comparison. For example, let's go back to table 6 again. If we had a similar table for the total population we would find comparisons useful for purposes of programing. We would then be able to see differences that needed to be considered in teaching methods, in program content, and in many other areas. So we find comparisons useful, even though again there are some points that we need to consider in making them.

### Trends

Trends are still another useful frame of reference in interpretation. For example, the milk consumption in a certain State was reported to have increased from 2,000,000 pounds to 2,200,000 pounds within a period of a few years. This was not a great increase, but both home economists and dairymen alike would be glad to see a 10 percent increase in milk consumption, particularly if it could be interpreted as a trend.

Unfortunately, in this particular instance, production on a per capita basis was stable. The population of the State had increased in the same proportion as had total milk consumption. This merely illustrates the need of some kind of standard (such as per capita consumption) in determining long run trends.

### Cause and Effect Relationships

Another important basis for interpretation consists of cause and effect relationships.

Table 7. Farm practices carried out with relation to farm operators' participation in extension

Practices adopted <sup>1/</sup>	Participation		
	Active	Inactive	None
	PERCENT		
Percentage of those with orchards who:			
Carried out an average of 3 recommended practices	75	68	50
Applied fertilizer	63	78	36
Cultivated adequately	75	80	82
Followed spray schedule	30	20	-
Treated for borers	32	20	18
Pruned trees	68	53	36
Thinned fruit	26	23	20

<sup>1/</sup> All practices were defined



One basic purpose of scientific research is to establish causes if possible to know the reason why. Now we also know that this is very difficult but we continue to try to do it. In table 7 we have what looks like a good case for attributing the acceptance of recommended farm practices to Extension. This is an illustration from an extension study which attempted to find out the effect of participation in extension on farm practices adopted. It might seem from table 7 that extension teaching had had considerable influence on the farmers' use of orchard practices.

In the same study, however, it was found that the farmers who were participants in Extension - the higher participants particularly - had higher educational levels, higher income levels, and lived on larger farms. Even though more refined statistical calculations might reveal a positive relationship, there is room for questioning extension teaching as the sole causal factor. It is logical to assume that some of these other factors might have been very important in the adoption of orchard practices.

We have suggested that establishing cause and effect is a difficult one. The statistical techniques for doing it are rather involved. Possibly causation in the behavioral sciences may be a little more difficult to establish than in the physical and natural sciences because of at least two factors. One, in the social realm frequently there is a two-way relationship between factors instead of a simple one-way, direct relationship. In other words, factor A is sometimes the cause of factor B and sometimes it is the effect of factor B. Secondly, in the social sciences, we almost always have a multiplicity of factors that could possibly affect an outcome.

Fortunately, there are simple techniques that a person may use to establish whether or not age, sex, marital status, residence, and so on, have any association with a particular factor. We should certainly try, in working with inexperienced people, to help them see the importance of including what some of us call "face data" or control items for purposes of determining association.

#### Standards as a Basis for Interpretation

One other important approach in analysis and interpretation involves the use of recommended standards. This is very closely related to teaching effectiveness and program objectives. For example, we have recommended standards in nutrition, livestock feeding, fertilizer application, and other areas. We sometimes like to see to what extent the populations we are working with, or people in general, are meeting these standards. We have illustrated this very simply in table 8. These data were based on an inquiry as to whether or not the population studied had eaten a serving of green or yellow vegetables on the day prior to the survey.



Table 8. Family members eating green or yellow vegetables and certain vitamin C foods on day prior to survey

Total number family members 2072.

Food item	Total no. replies to each	Number	Percent
Number of families in which every member ate at least 1 green or yellow vegetable	597	522	87.4
Number of family members <u>not</u> eating green or yellow vegetables	597	102	5.0
Number families in which every member ate a serving of certain vitamin C foods	597	511	85.6
Number of family members <u>not</u> eating certain vitamin C foods	597	141	7.0

Here again, as elsewhere, it is important to insure objective responses to our questions be proper question working. It would be a mistake in most instances to ask, on a schedule, "Did you consume foods rich in ascorbic acid?" Many of the respondents would not know what foods are rich in ascorbic acid. Therefore, the questions would need to be asked in terms of foods known to be rich in ascorbic acid.

As many of you know, there are some excellent references that are now available. You may be familiar with: Statistics - A New Approach, by W. Allen Wallis and Harry V. Roberts, published by The Free Press, Glencoe, Illinois, 1956. There is a paragraph or two that we would like to read by way of a summary statement.\* The authors comment that "the most important thing to know about the interpretation of statistical data is that they do have to be interpreted. They seldom, if ever, speak for themselves. Statistical data in the raw simply furnish facts for someone to reason from. They can be extremely useful when carefully collected and critically interpreted. But unless handled with care, skill, and, above all, objectivity, statistical data may seem to prove things that are not at all true."

Further on, they add: "It is sometimes said that statistics are used the way a drunk uses a lamp post: for support rather than for light. ... The view that statistical conclusions are usually wrong is often supplemented by the view that when they are not wrong they are self-evident and trivial: 'A statistician is a person who draws a mathematically precise line from an unwarranted assumption to a foregone conclusion.'

"Misuses, unfortunately, are probably as common as valid uses of statistics. The ability to discriminate between a valid and an invalid use of statistics is more important for most people than knowing how themselves to make effective use of statistics. No one - administrator, executive, scientist, or a responsible citizen in general - can afford to be misled by bad statistics: and everyone needs knowledge that can be gained only through the effective use of statistics." Unfortunately, emphasis on misuses may give the mistaken impression that statistics are seldom or never reliable. Notice however, that most misuses represent potentially good uses of statistics. 'We share with Socrates the pious hope that men avoid mistakes once they are aware of them ...' "

\*Permission to quote from the text was granted by the publishers.

ACTION RESEARCH TO IMPROVE EXTENSION  
PROGRAMS AND PERSONNEL

Arthur W. Foshay

Let us begin this discussion by reminding ourselves of the nature of any research. It seems to me to be helpful to point out that research is the name of our methods for knowing. Defined this broadly, it is appropriate to call any careful thinking a form of research. The term connotes, for most of us, a considerable intellectual rigor. In the degree that we have been rigorous in the use of the methods of research, we may place confidence in the conclusions reached. But my point just now is that research is the name of the methods.

Certain requirements must be met if research is to go forward. I shall mention, here, three of these requirements: the requirement of certain attitudes; the requirement of certain skills; the requirement of ethics.

First, a researcher must have accepted himself as an inquirer. He must have an attitude toward himself that permits him to take his own ideas seriously. Now, this is not easily achieved. We live in the midst of a social tradition that seems to imply that the first task of the researcher is to take himself out of his inquiry. The term "objectivity" is thought to mean that research should be impersonal; that the researcher's personal values have no place in what he does; that the "consumer" of research is to adopt an Olympian detachment from the data of his work. It has become increasingly apparent during recent years that this is not true, or even possible. I remember having heard a physicist answer the question, "why are you studying the molecular structure of the upper atmosphere?" by saying, "I have found a beautiful little molecule." He was serious in using the word "beautiful." And I would submit that he told the exact truth. The thing to which one devotes one's major energies had better be perceived as beautiful, or otherwise desirable - else one has wasted one's life. The situation is even clearer in the social sciences, where research is ordinarily used as a means for checking the values one holds against the values implied by society as it appears to be. It is true in the science of genetics. I remember having reread after an interval of 20 years the research on the Kallikak and the Jukes families. When I first read this material as an undergraduate, the social implications seemed clear and simple - these families should have been brought to an end. Having reread the material, I found myself outraged at the researchers for having raised the question the way they did; human beings are not to be treated like animals. The important thing about these two family trees is that a number of the people in them turned out to be normal and productive human beings, in spite of their poor background. And to pretend that the geneticists who did that work had not allowed their personal values to enter into the questions they raised would be to falsify matters. I will offer as a rule for us who direct our inquiry at human beings that it is of great importance for the researcher to admit that he, too, is a human being, and that his values have a shaping effect on the questions he is willing to inquire about, and in the way he poses these questions. Moreover, it is required that he have a favorable attitude toward himself as a person



qualified to have the values he has. The alternative position leads to pedestrian, relatively insignificant research.

In addition to this attitude toward himself, the researcher must develop an attitude toward the problems he faces that allows them to be open for inquiry. Specifically, this means that he must value the idea that his inquiry may turn up findings that he doesn't like. The problems he faces must be thought of as open to inquiry in the sense that they are open valuewise. This is a little different from the usual injunction that the researcher be openminded. Of course he must be openminded; what I am referring to here has to do with his attitude toward the specific problems he studies, as distinguished from his attitude toward himself. The injunction to be "openminded" has usually been taken to imply that the researcher should have no prior convictions about the outcomes of his research - and I have stated that I think this is humanly impossible, and if possible, wrongheaded. I think the place to be open is with the problem, and that openness is different from lack of conviction. If one has convictions, and yet can inquire in such a way as to allow the convictions to be challenged by the inquiry, one has somewhere to "put" whatever challenges arise. The way to get control over one's convictions is not to act as if one did not have them, but rather to bring them out into the open. The second requirement is, therefore, that one consider the problems to be studied as open to inquiry in the sense that the inquiry may proceed according to its own rules, with full knowledge of the researcher's commitments.

The second broad area of requirements is in the field of research skills. Most research training has to do with the development of these skills. I think that this is unfortunate, precisely because I believe that the attitude of the researcher toward himself and toward his work is more fundamental, and that the skills can be either developed or learned in action. However, skills are obviously necessary or no research could be carried on. Without going into detail about the skills required to conduct research in the extension setting, or in the school setting, let me merely categorize the skills that are required.

First, skill in the design of research is required. It has been interesting to me both to hear from active researchers, and to notice, myself, that one spends most of one's time designing a research project, and only a minor proportion of one's time in actually carrying it out. Very often, the carrying out of a research design can be delegated to someone else, and often at very low cost. The greatest skill is required at the point where the problem is set up for study, and at the later point when the findings are interpreted and their implications considered. So the primary skill area seems to me to be skill in design.

Technical skill is, of course, required. If one doesn't know the techniques of research that are available, one cannot design intelligently. Modern statistical methods are of enormous value - as you people in extension know very well. Many of the statistical techniques now used in education and in psychology have been developed in agriculture.

I remember that the textbook I used in learning the analysis of variance device drew all of its illustrative material from studies of the growing of corn. And so I shall not spend any more time discussing techniques with you. It is sufficient to say that they are numerous, that they are important, and that they are available.

The third basic requirement for the researcher is a clear code of ethics. Again, I wish to draw a contrast between the ethics of research as they have ordinarily been thought of, and as they appear to me. I believe, with everyone else, that the researcher is ethically required never to falsify the data he gathers, not to withhold information that is relevant to his findings - that is what is required under the heading "honesty," it seems to me. But there is another kind of ethical requirement. In educational research, we frequently gather data about children without their knowledge. We sometimes try experiments in the education of children without their permission. Now, in the degree that we can conduct research with their knowledge and with their permission, we are in a cleaner position, ethically, than would otherwise be true. Nevertheless, children are often unable to judge whether they ought to have knowledge and give permission for experimentation to go on. When this is true, the researcher is required according to any decent human code of ethics to hold the risk for the children at a minimum. To put this matter in an extreme form, it is obviously unethical for an educational researcher to alter the basic personality structure of a child for the worse, no matter what valuable information for other children he might discover in the process. We may not treat children like laboratory animals. In a less extreme form, but by the same token, we may not experiment with other than promising ideas in school nor (I should think) in extension work. The researcher who works with human beings can never forget that the human beings he works with are sacred.

So much for the requirements that accompany the methods of research. I turn from this to a consideration of action research.

One might ask, first, why call it action research? Why not call it simply research? Or study? Have we once more added to the jargon of education?

Perhaps we have added to the jargon. It may turn out over the long haul that this term, like so many others that have been used in education, was not necessary. But it seems necessary now, because of the emphasis that the term carries. Action research is research carried on at the point of action, for the purpose of improving action decisions. Action research to improve the curriculum, in school, is carried on in classrooms, in school buildings, and its purpose is to improve the decisions that are made by the people there. It is contrasted with fundamental or laboratory research primarily with respect to its intent, and not at all with respect to the methods employed. All of the techniques, methods, attitudes, and ethics that are true of any research in the social sciences are also true of action research in the schools, or in extension work, or anywhere else where human beings are the subjects. However, the decisions at the point of action in schools are in a highly complicated setting, in which many of the relevant factors are unknown, and some are unknowable. For this reason, it has seemed helpful to place the research in the action setting where these factors are in



operation, in order that whatever they are they may have their effect on the research, thus hopefully making the results of the inquiry of greater value at the point of action. But the purpose of action research I repeat, is to improve the quality of decision making at the point of action, wherever that point may be.

Now in the schools, and I suspect in extension work also, there are three ways that are in effect now for making decisions about the content of the program.

The first of these is by committee and committee edict. Not long ago, in a certain midwestern city, it was announced in the newspapers that final examinations were to be reintroduced for all of the high school subjects. This decision, which takes high school education in that city back to where it was in the early twenties, (perhaps it never had left there) was reached by a committee of high school teachers appointed for the purpose. This committee consulted carefully with the school administrators, parent, other teachers, and even the high school children. Having completed their consultation, they announced their conclusion and it was put into effect. Committee decision, then, is the first and most widespread form for making curriculum decision.

Second, curriculum decisions are made by vote. In an elementary school where I visited not very long ago, the subject for discussion at the faculty meeting was "How shall we spend a limited library appropriation?" Two possibilities had occurred to the group: We shall spend it to buy supplementary readers for the classrooms, or we shall spend it to add to the library. These two possibilities were discussed at some length. Eventually, a vote was taken. A clear-cut majority decided to spend the money for supplementary readers in the classroom, and the money was spent.

Third, curriculum decisions are made by legislation. The Ohio legislature decided, in 1955, that certain school subjects should not be taught until certain other school subjects had been covered. The intent behind the legislation was perfectly clear in the way it was set up - the legislators are afraid that study of the social sciences can threaten the American values that must be held by the products of Ohio's schools. And so they wrote a certain portion of the curriculum into the law of the State.

Now all of these approaches to making decisions have one thing in common. All of them precommit the decider to the correctness of his decision. This commitment to the correctness of his decision is made in advance of any evidence that the decision will work out as predicted. And in the degree that the decision does not work out as predicted, the judgment of the person who made the decision is under suspicion. Therefore, it is only natural that those who make decisions in this manner - and that is most of us most of the time - go to great length to rationalize any inadequacies that may later develop. We cannot afford to have our judgment open to question very frequently, so we act as if our judgment was right, but something else was wrong. We have risked our reputation, and we defend it.

Now, I do not mean to imply by pointing to the hazard in this kind of decision making, that we should stop making decisions in this manner. After all, the informed opinion of experienced teachers is not to be taken lightly; voting has its uses; legislators have their responsibility to the people of their State. What I mean to emphasize is simply that the risk taken in this kind of decision making is rather profound.

How can we reduce this kind of risk? I suggest that we could minimize this kind of risk taking by setting up what the researcher would call a pilot experimentation in advance of large decisions of this kind. When you try something out on a pilot basis, the risk of failure is confined to the pilot situation. You do not have to risk the welfare of all 20,000 high school children in a city to find out whether final examinations will improve the quality of their work. You could find this out with as few as 50 children.

Moreover, you can minimize the chance that a teacher who was not involved in the making of this decision will ridicule the decision if you involve the teacher in the decision making. The more widely cooperative such research is, the more likely its results are to be accepted and to be put into use. I once visited a high school in New Jersey in which an "experiment" had been undertaken with lengthening the high school period from 45 minutes to 60 minutes. Now there are certain arguments in favor of longer high school periods which I need not review here. The point is that the administration of the high school had reached the conclusion that the longer period should be tried for a year. They altered the tape on the master clock in the school, so that the bells would ring that way. When the teachers returned from their summer holiday, they were informed that the new bell schedule was in effect on an experimental basis. The teachers had not been involved in making this decision. A few of them thought it was a good idea to try; some thought that the whole idea was ridiculous; a number of others thought that whether or not it was a good idea, they should have been consulted. It meant for them, a substantial revision of their teaching plans, to be made suddenly just before the beginning of the new school year. At the end of the school year, it was announced that the experiment had failed. In an important sense, it was exactly the experiment that had failed. The idea of the longer period had not really been under test. During the entire year, the teachers who had not been involved and who disapproved of the idea found ways of criticizing it, making it not work, telling the children that they were wasting time that would be better spent if the periods were shorter, and so on. And so it was the experiment that failed, not the longer period. The real finding of this "experiment" was that there are all kinds of ingenious ways that teachers can find to resist administrators when the administrators impose an idea on them.

I conclude that it is necessary that action research be undertaken with the full cooperation of those who make the action decisions. This means, to me, that the teachers (you may substitute extension workers) must be involved at the point where the design for the research is worked out, as well as at the point where the data are gathered and the later point when the findings and implications are analyzed.

This is why we in education have come to call this kind of effort cooperative action research. The reason that we wish it to be cooperative is not that



we have turned "groupy"; the reason is that we wish the research to be well designed, and that we are very eager for the findings - whatever they are - to be put into use.

I have referred to the necessity for skill in the design of research. It has seemed to me that many of the difficulties faced by teachers as cooperative action researchers turn on the solution of problems of design. Let us first remember the usual phases through which any research project must pass: the statement of the problem, the development of the hypotheses, the gathering of evidence, the drawing of conclusions. It seems to me that the making of an hypothesis is the knottiest of the problems presented by designing research. I wish, therefore, to illustrate how hypotheses for action research are made, and to describe a way of thinking about them that has seemed to me to be helpful.

Any hypothesis has two parts. Any hypothesis is a tentative statement of a relationship of some kind. The classic form for an action hypothesis would be if A, then B. If I use this teaching method, I will effect this behavior change, If I begin committee meetings in a certain way, then I may expect the agenda to be built in a certain way. If I put a good fertilizer on my lawn, then the grass will be greener than it would otherwise be. If I let go of an iron ball suspended in midair, it will fall to the ground.

There are, of course, many other forms in which hypotheses may be stated. It seems to me to be helpful, however, to bear in mind this if - then construction, since any hypothesis is a statement of some kind of contingent relationship. It is possible, of course, to have many terms in the A section of any hypothesis, and many terms in the B section. "If I do these things (term A) then these things (term B) will occur. If I find a man with these characteristics (term A), then he will behave (term B) in these ways."

Now, for an hypothesis to guide research, it is necessary that term A and term B be the names of available and concrete bodies of evidence which may be put in hypothetical relationship with one another. Until the precise evidence has been named, the hypothesis cannot be used. A working hypothesis, therefore, is one in which the terms are the names of evidence.

A great deal of the work one does as a consultant to action people consists of reducing their generalized concerns down to working hypotheses which are relevant to the concerns they have. A good deal of the mistrusting of research people by responsible action people arises from the tendency of research people to develop working hypotheses that have little face value. That is to say, hypotheses the terms of which name bodies of evidence which do not seem strictly relevant to the action problems as faced by those in the field. In order to make the working hypothesis relevant to the field problems, it is necessary that the field person be involved in the building of working hypotheses. They are the only ones who can finally judge whether the working hypothesis that is finally developed is relevant to the general concern they had as the designing began. Let me illustrate this process.

I have been working with a number of elementary school teachers in the general field of elementary arithmetic. I shall give you a number of statements of the problem, in the order in which they appeared while we were designing our research. You will notice that the first statement is not an hypothesis at all, but the name of the generalized area of concern. Each of the following statements represents a successive narrowing and specifying of the problem, until the final statement of the hypothesis is in working form:

1. "The trouble is that the children don't like arithmetic.
2. They know how to compute, but they can't solve word problems.
3. The development of arithmetic reasoning is our main problem.
4. Arithmetic reasoning is related to intelligence.
5. Arithmetic reasoning is related to reading ability.
6. Arithmetic reasoning will improve if the children practice word problems.
7. Arithmetic reasoning will improve as the ability to formulate word problems improves.
8. If children will formulate word problems in arithmetic, their general arithmetic reasoning will improve."

Now this series of statements was the outgrowth of nearly six months of work with a group of teachers who met for an hour and a half once a week. The successive formulations in most cases arose because I, as consultant, asked certain questions of the group. I should like to review these questions with you.

The first statement of the problem was, "The trouble is the children don't like arithmetic." My question was, "Is it all of the children who don't like arithmetic, and is it all of arithmetic that they dislike?" This kind of question from a consultant usually helps to narrow the problem somewhat, since anyone knows that nothing is always true about a group of children - or any group of human beings. Furthermore, anyone knows that anything that is true about most of the people in a group is not true about all of them. Therefore, the effect of my question was to cause the teachers to say "No, it's not all of the children and it's not all of the arithmetic. The thing that bothers us most is the fact that they don't do the 'word problems' well enough."

This led to the second statement in the series. When the second statement had been raised, I once more raised a question. This time I asked what it was that word problems were supposed to help children do. There are many answers to this question; we settled for the general term, "arithmetic reasoning," as stating the general purpose here well enough. We had now narrowed down one part of an hypothesis (perhaps eventually our term B) so that it did not relate to all of arithmetic, but rather to one relatively small part of it. But this small part seemed to the staff involved to account for a great deal of worry they had been expressing. It was now possible to gather some evidence so that the problem could be more sharply described. Accordingly, we gathered examples of children's solutions to word problems and made up a short test consisting entirely of word problems to try on a few children. It was in the course of making up this examination that the first actual hypothesis (that is, statement of hypothetical



relationship) appeared in our discussion. This is given as the relationship between arithmetic reasoning and intelligence. Now, intelligence can be determined through the administration of an intelligence test, and this statement was, therefore, conceivably a working hypothesis - at least, one of the terms did name a specific body of evidence.

As consultant, I now raised a question as follows: Suppose that we found that arithmetic reasoning was related to I.Q. What would we be able to do then that we aren't able to do now? What would we do with the findings if we had them? This question was, in effect, rhetorical; obviously, one can do little about I.Q. The staff reacted to this question by suggesting that we assume that arithmetic was related to I.Q. and get on to studying something over which we as teachers have some control. This led to the next formulation, in which arithmetic reasoning was stated as being related to reading. At this point, I raised two questions: First, do we mean the ability to solve word problems when we say arithmetic reasoning? And, if we found that this ability was related to reading, would this lead us to teach reading in order to improve arithmetic? Here again the staff said that they would henceforth take the ability to solve word problems in the test which we were developing as an example of what we meant by arithmetic reasoning, and that while this kind of ability might be improved if we taught reading better, that we would do that anyway and that we still wish to develop an action hypothesis in which a way of teaching arithmetic was central.

We therefore went on to the next statement, in which arithmetic reasoning is related to practice in word problems. This was an action hypothesis, but "practice in word problems" was not a very specific term, and it was difficult to gather evidence concerning such practice. The teachers nevertheless went ahead and increased the amount of practice in this kind of problem with the children, and thought that the children's ability to solve problems of this kind was improving as a consequence. However, they had not really tested the hypothesis - the evidence that this method was successful consisted entirely of their subjective reports that it was successful.

We therefore moved on to the final formulation. In this case, we had developed a series of short tests of the ability to solve word problems that were satisfying enough to us so that we were willing to take them as one term of an action hypothesis (term B) and to try as term A the tendency of children and their ability to formulate good word problems. At this point, we thought that we had a working hypothesis. Work after that point in the study group has been quite productive; not only have the problems the children bring in been kept and studied, but the patterns of error that the children have in solving such problems now come under study.

As this school year came to an end, some teachers in the group have reported that their children this year are approximately one year ahead of the children they had last year at this same time, as measured by a standardized test. Now, the generalized improvement in arithmetic was not the explicit objective we had undertaken to achieve. It may be that the general effect of studying in a field like this is to increase the

teachers' interest in the field, thus increasing children's interest also. In any case, this series of approximations to a working hypothesis did result in the development of an hypothesis that could be studied.

The role of the consultant in this kind of effort merits special attention. I have tried to illustrate the general problem of designing a working hypothesis, and I have tried to point out the kinds of questions that I and others have found helpful in such research situations. There is much more to the role than these somewhat technical requirements. The action research consultant has to develop skill in human relations, because the process of developing a research problem of this kind is often quite frustrating.

The research group is bound to run into some blind alleys, and there is the overriding uneasiness that accompanies attempting a thing of this kind. People do not ordinarily have confidence in themselves as researchers. They are altogether too ready to give up on the process. Maintaining interest and confidence in this kind of process therefore requires special attention. I have found that the best way to maintain this kind of interest and confidence is to guide the group into the gathering of evidence just as soon as it is possible to do so. In most cases, it is possible to do so very early in the game, because everybody wants a sound description of the existing situation before he is willing to make very much progress.

It is notable that committees ordinarily do not gather factual descriptions of the situations they are responsible for. I have found that if one will go to the children in a school with the questions the researchers have in mind, that the answers children offer shall further elaborate the human relations problems and the importance of early evidence gathering here.<sup>1/</sup>

It seems appropriate to close these remarks with a statement of a kind of hypothesis that describes my faith in the research approach to the development of programs.

If action research is applied to curriculum development, then the curriculum will improve; the staff's professional attitudes will improve; available research will be used meaningfully; professional leadership will function at its best.

I say again, this is an hypothesis. It seems to me to be a promising one, primarily because it allows all of us to use our heads.

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<sup>1/</sup> 1957 Yearbook of the Association for Supervision and Curriculum Development, Research for Curriculum Improvement; also see Stephen M. Corey, Action Research to Improve School Practices, Bureau of Publications, Teachers College, Columbia University, 1954; A. W. Foshay and K. D. Wann: Children's Social Values. An Action Research Study, Bureau of Publications, Teachers College, Columbia University, 1954.



### Points Discussed

In response to a question as to how much action research would help extension workers who carry out the dual role of research and training, Dr. Foshay said he viewed action research as a form of inservice training in which you get a sharper focus than is usually true on the local or immediate problem. It allows resource people and resource materials to do their work more effectively.

Action research is the name for people trying to think about what they are doing. Since thinking is really all they can do about what they do, action research is the ultimate solution.

Dr. Foshay also reviewed the training alternatives used in schools; (1) the arithmetic problem which had involved weekly meetings all year; and (2) using two outstanding men in the field of teaching arithmetic at Ohio State to lecture to the staff, do some demonstration, and carry on discussion.

The second alternative gets different results than the first; it involves the staff more completely, they are ready for these men to talk to them in a way they couldn't have done otherwise. It casts the consultant into two roles: training in the methods of inquiry, and training in answering

Miss Shipley asked for further elaboration on the "sequential steps" in the scientific process that he considered important for extension workers to know.

Foshay: First, I think I have to drop "sequence" out of it in the sense that one follows the other neatly. There are these phases of any inquiry. I dealt at length with the first one, locating the problem. But notice that at the point where you would like to decide what the problem is, you carry out a piece of research which has all of the phases in it. You take the location of the problem as the object of your research.

Having located the problem, you then have the research problem of deciding on evidence gathering methods that are relevant. This becomes a research project itself. How shall you formulate the problem with respect to the methods to be used? What shall you take to be a valid method? What evidence would help you answer a question? Is this method of gathering evidence the method that will answer my question? At the point of application you have it to do all over again. So you have a cycle. I think this is true of any research.

Think of the dissertation that many of you have written and how it developed. You have a cycle rather than a series of steps, and the cycle repeats itself with a different emphasis as you go through the research process.

The cycle includes these four emphases: problem identification, hypothesis making, evidence gathering, and interpretation. You go

through this cycle with respect to problem identification, you go through it again with respect to decisions on evidence, you go through it again when you interpret or try to apply the results of your inquiry. I don't know how you would represent that. It would be a series of interlocked lines of some kind. I have never succeeded in making it graphic.

Jehlik: Dr. Cory says in his book, action research is conducted in the heat of combat, and the universe is only the group with which teachers, supervisors and others are working. This morning you made a statement that 90 percent of the time should be spent in designing the study and 10 percent in carrying it out. Does that not presuppose removing it from this heat of combat? Or how can we go about reconciling these two situations where it is necessary to do an adequate job of planning and designing a study when at the same time, as action people, we must keep on acting?

Foshay: You can't subject the whole operation to research precisely because it is necessary to stop and think. But with respect to a lot of what you do, it is important to stop and think and so what you do is to try to keep some aspect of the program under research all the time but not the entire program. As I indicated earlier there are 3 or 4 modes of decision making. And most decisions are going to go right on being made on these bases because you have to. While they aren't perfect, they are not wholly imperfect by a long way. The judgment of experienced people is not a bad criterion whatever its style or fault. You work with a part about which it is possible to stop and think. We have to stop, but not in the heat of combat. You have to find an aspect about which it is possible to pause, to be reflective.

Kreizinger: Are situations of a teaching staff and extension staff comparable? In much of our extension programing and carrying it out, we have a supervisory staff, a State staff or specialist involved, not there. And in developing the problem in relation to educational needs, in the county, is it necessary for all those factors to be represented in this look-see, to begin on a definition of the problem to be researched?

Foshay: I recognize the difficulty of getting them all involved. I would certainly do my level best to get them in at the outset and keep them in as much as feasible ~~because~~ they have to accept the results.

We have a similar problem in a school system where you are working with one school staff and there are 10 other schools. What is the attitude of the other 9 to be? I did a project of this kind for 3 years in Springfield, Missouri, where there were 23 schools. I worked with the staffs of 6 of them. I say in all candor that the transfer from the 6 to the balance has not been very great. What has transferred in some cases is important - what transfers is the attitudes rather than the findings. What transfers from one action situation to another when one does research on it is not the findings generally, but the methods used to achieve the findings.

Therefore, what you report in action research project ought to deal heavily with the methods used. Every effort should be made to make those methods clear so if someone else wants to use them, he can do so, and verify or



contradict whatever findings you may have made in the research that was done. This doesn't mean you withhold the findings at all, but rather you don't consider the findings to be the main outcome.

Turner: Let's suppose a county staff decides to do a project - let us take the home agent in particular. She has a big program and needs to reach many more people with only 24 hours in the day to do it. She may need to determine how her program can be changed in order to reach more people. The program involves the people she is reaching. How far do you go in involving lay people in the research process?

Foshay: Let us consider the nature of the problem here. As I understand it, the problem is the agent's problem. The question she has in mind is how can she reach more people. This is a universal question for such people. How can I multiply myself? There is never enough of me. This I say again is her problem - it is not the problem of her clients. Now, in order to multiply herself, she may think of something to be done, and I won't try to imagine what that would be, but she might try large group meetings. It may occur to her that this is a way to contact a lot of people. Now the question would be, what is it, what evidence could you gather about these large group meetings that would satisfy her question. That is, she would have to gather evidence that would relate to the kind of impact she was having on this large group she had gotten together somehow. I suppose the evidence would be gathered from them and she would explain to them why she was gathering the evidence. But the problem is still hers, not theirs. Their problem has to do with the quality or the content of the meeting. Her's has to do with this administrative thing. Is this what you are after?

Turner: Not exactly. Suppose the home agent has been accustomed to teaching small groups and she can extend herself by training the women in smaller groups to go back and teach in their own groups. How does she make the idea acceptable to them? How do they take part so that they can decide "It is our decision." They have done the research on it and so the change is acceptable to them.

Foshay: At this point she has to work with them to elicit the question and get it formulated with them. This I have found from experience, a fairly long drawnout process. It makes it mandatory that this be done not with the entire group of people she is trying to deal with but with a selected group of them and then picked up with others. I have found this sort of thing happening in school staffs that when you catch yourself in this research consultant role, instead of in the consultant's role or the answer-giving role, the school staffs really come alive. Repeatedly, I have had the experience of seeing what I would view as a sleepy, tired, somewhat cynical school staff come to life professionally. They do a lot on their own about getting the evidence, when it is their question that is being examined. What they are tired of, what they are cynical about, and they are so experienced with, is getting the question named and accepted as a good question and then dropped.

Foshay: Sometimes you have to hold them in check a little because they overexcel, but in any case I think there is the hope that some of these people will become your counterpart and go out and spread the approach.

Shipley: Ours, as you know, is a very informal program and we have been much concerned lately with making sure that we know procedures for determining the program. Were you saying that we can use these procedures in getting both content and procedures?

Foshay: Yes, very much so. Of course, a consultant requires quite a battery of skills. What I am implying is that under ideal circumstances some of the trainees become aware of the consultant's skills and can use them in their own work.

Shipley: Helen Turner was referring to a situation where the local voluntary leader was part of the action force.

Turner: They are not trained people in the sense that teachers are trained, yet they are a part of our planning situation and have a part in developing and carrying out the program. It seems to me that there would be some value in getting those people involved in the research process.

Foshay: Now to get them involved, you have to bring to them enough knowledge of research approaches so that you can suggest simple things for them to do that are not oversimplified. It must look to the volunteer leaders or teachers like a common sense process or they won't have anything to do with it. There is too much else in their lives, so you must rely on quantitative measures, for instance, that people already know.

Everybody knows or once knew, how to compute a percentage; so a little of what you do is computing percentages. If you have two different percentages and you want to raise a statistical question about significance of the difference, you raise it and then you go off and do the computation or get somebody to do it and bring back the results. You don't ask them to go through the hoopla that is involved in that case because it will scare them off. A lot of it has to be on a very simple accounting basis but I swear that you can go a long way on that basis.

Kreizinger: Along that line I would like to ask a question. Usually there is only one or two of us in a State and sometimes only a half of one. How much time do you find it takes with a staff to go through a situation with them? How much time would that take and after they have done that once, do they go ahead on their own normally to investigate other problems? How much time does the consultant or leader of research and training spend with them after that?

Foshay: I can only respond to this by describing my experience. You will have to see how it transfers. I mentioned a project in Missouri. This was six school staffs averaging 10 to 12 teachers. In this instance, I came to town once every 6 or 7 weeks and spent one morning with each staff. This went on for three years.

During the second year, their questions and the lines of inquiry they were carrying on were really quite important. During the first year, we spent our time exchanging opinions we already held, in a sense clearing away what



was obvious about it, examining some things, gathering evidence to be sure, examining some relatively superficial questions. The second year of this process the questions were no longer superficial, they were way off on what was new ground for me.

The third year, they became quite fundamentally exciting, although we spent a great deal of that time writing up what we had done. In between visits, it took a lot of my time. We tape-recorded most of what we did. I listened to the tape and sent memoranda and the summaries back to these people. I was clearly out of touch in between because I was in New York and they were in Missouri. It took about as much time for me to write up memoranda and carry on correspondence with these people as it took for me to meet with them.

Jehlik: I would like to raise a question about a remark you made. I think I am in agreement with you on it but I would like for you to elaborate a bit on it. You made the statement that social values are one of the weaknesses of setting up a research project. I think perhaps that is more true in the social sciences than in physical or biological sciences, though you see evidences of it there, but does it necessarily mean that we have to sacrifice objectivity? Doesn't it mean that we need to force ourselves into pretty rigorous or rational thinking?

Foshay: I think what is required is that we have a definition of the good term "objective" that doesn't assume that our values are not involved in what we do. I think you are quite right that this is true of the social sciences especially.

Try this as a definition of objectivity - a functional definition - a fact is an objective fact if the public that is concerned with it agree on what it is. Objectivity is the name of public agreement. Suppose you say about a child in school "He can't read." Now there are all sorts of degrees and kinds of reading and I might say that when you say "He can't read" that he can't read at all, he can't recognize any words, can't recognize his own name. Is this a case of alexia?

You know, and you might say you can't agree that this is what we mean by nonreading for purposes of study. At that point, nonreader, the definition of nonreaders, is an objective definition, and we are objective about it. But we could choose to define it differently. We could say "He can't read above a certain level on a standardized test" and then we would again have an objective definition. This allows the values to be present in it in that we are still talking about reading, and we still have certain objectives in mind as to why people should learn to read. You will forgive me for using these school types of illustrations.

Objectivity, then, becomes a matter of arbitrary and agreed upon definition. And what you have to be clean about, pure, if you please, or rigorous, it seems to me, the process used is to arrive at these arbitrary definitions. I would think this would be as true in chemistry as in psychology.

Jehlik: Of course that part of the process is setting up the hypothesis that you are going to test.

Foshay: Exactly. Let me dwell on this a second longer. I think the place where these values enter in, and they ought to enter in clean and consciously, is early at the point where you pose the main question you are going to examine, and then late, at the point where you decide what should be done in the light of whatever evidence has been gathered. The process in between is a clean and rigorous process and if it is used in order to make your values clear, then it is very helpful. If used to obscure the values, I am sure it is a confusing process as in the case of the Kallikaks and the Jukes.

Gibbs: I would like to pose this question. I am working in the production field and some of my counterparts in the States are confronted with problems that actually are looking a little bit into the future, and seeing some difficulties that inevitably will arise. I am wondering how far we are justified in going in getting people involved in preliminary work before the time that they actually have departmental or combined research projects set up.

Foshay: I think I don't know enough about the working situation to deal with this very well. What do you think of the hazards involved in getting people so early.

Gibbs: I think it would depend on the situation. Take a problem I was thinking of - the rapid growth of the strawberry industry in California, and we know that in a very short time, the growers are going to be in difficulties because the industry expanded so rapidly and there is little information available on production practices. We took off on a survey for one year and developed a lot of information in cooperation with the research people. It was not the type of data that could be analyzed statistically. However, it was good background information which we were able to use in setting up a project at a later date.

Foshay: Well - this sounds to me as if the questions to be raised were technical questions. I think that the existing ways for obtaining technical information should be used, that you would put this into an experiment station to get the technical material gathered. The social phenomenon would become important from my point of view or relevant to what I have been talking about at the point where the technical information has been gathered and you say, how do we disseminate, how do we get people to accept the new thinking.

Matthews: I wonder if you have found a problem in getting people involved who have a heavy schedule of work?

Foshay: I think this comment "I haven't time ..." to do whatever it is is always representative of a value judgment. It is a way of saying, or maybe concealing, a feeling about it, that is to say, that it isn't as important. I don't see the promise in it that I see in the things I am now doing. With teachers it is necessary to deal with questions that they are already trying to face as they work with children so that while working with the children,



they deal with the questions.

That is part of the answer that occurs to me. The other part is not so kind as that. We tend to say that if they aren't interested, we won't bother them. We work with those who will take time because you get a lot more done with those people. So we say, since we can't work with everybody on this basis at the same time, we will work with those that are willing to work with us and then take every precaution to see to it that what we work on, the content of the work, is central to the work they are trying to do.

This movement is not sweeping the country. I suspect it never will. But it does hit hard the top 15 or 20 percent among teachers, in terms of something you could call loosely a professional motivation. That is a group of gifted teachers, the inquiring teachers, a group that is ordinarily overworked. I get a little hardnosed about who is going to be involved. I haven't time either to work with people who haven't time to work with me.

Matthews: Have you found that the administrative attitude or climate in the institutions or organizations where you are undertaking projects is a factor of importance?

Foshay: Oh, yes. Absolutely. In school situations, for example, you cannot work without the principal. He is literally the keyman, so if you seek to work with a school staff, you first work with the principal, not trying to sell something, but to explore possibilities with him. You talk with him about what he thinks are the chief problems in the schools and what are the interests of the staff, and so on. And if you lose his involvement in the project, the project almost invariably fails. I don't know what the exact parallel would be but a favorable administrative climate is a basic necessity. In the long run, the school cannot rise above the insights of the top administrator.

I would like to illustrate with a story. There was a consultant working with the six first-grade teachers in PS-125, New York City, a school system with a terrific hierarchy of people. In this instance, the principal of the school gave permission for the work to go on and so it went on. The consultant worked with the six people for a year on the first grade classroom climate in this school. The climate, by tradition, in many of the New York City schools is punitive, regimented, and so on. The consultant and the first grade teachers succeeded in altering the climate of these classrooms. It was really quite a remarkable thing. The principal came in once or twice and she was quite surprised at the noisy confusion of children at work that was going on. She turned her back on the children and said, "If I had just heard the racket that was going on and wasn't looking at the children, I would think there was chaos here. But when I look at the children, I can see what they are doing, and it looks good to me." This was very supportive - so she was giving permission and support. This visit I am talking about took place in February.

The year came to an end and late in May the staff met once more, this time with the principal and the consultant, to go over the year's work, to talk it through. The principal asked a question that simply torpedoed the whole year's work. Her question was "Well, this is very nice. How is the reading?" They hadn't been working on reading, they had been working on climate, and the reading was the same as it always had been. Her question had the effect of destroying the possibility that those teachers would continue to do what they had learned to do the following year. This put them back on the job, they were going to teach reading, and the thing came to an end. It wasn't reestablished. It couldn't be reestablished. She thought it was all very nice but it was unimportant. So, you see, the understanding that Glenn Dildine referred to was missing. I think that if you can keep the person in the hierarchy, the key guy, involved in the project directly, that your chances for continuation and success are greatly enhanced.

Stone: I think you pointed it out quite well, that action research is concerned primarily with methods. There is a limitation to action research if you are interested in obtaining factual information from research that would add up to long range development. There is very little adaptability of climate from one area to another.

Foshay: Yes, I hate to admit it but I have to accept the terms you have used, and then try to reject the emphasis. In schools, the difference among schools gets quite impressive if you look with any depth into it. It is because the human constellation is so complicated. That is why Corey says, and I echo it with a great deal of emphasis, the importance of taking the immediate school population as the universe you are working with, and to avoid trying to generalize findings from that universe to another universe because the similar analogy is too difficult to prove.

From the point of view of a fundamental researcher, action research sounds like planning for research and what it produces are interesting hypotheses, not generalizations, that apply now to untested population. It does, however, produce fascinating hypotheses.

In some instances, it also considers the fundamental theory. We talked about climate a little bit. You recall the work done at Iowa on atmosphere, classroom atmosphere. That work was done with a model social situation, the content of the activities was mask-making, and this was a simple thing. You can vary conditions and you can see consequences, and so the idea that there was such a thing as atmosphere in a group was established out of that research. Also established was the idea that was useful to classifying the atmosphere, democratic, laissez faire, autocratic. Now that theory is fundamental.

Ruth Cunningham took it to Denver and tried to apply it to some classroom teachers there. They found that the 3-fold classification would not describe what they saw happening in front of them. Therefore, they made a 5-fold classification, and in the course of doing that, altered the fundamental theory. In this sense, a principle can be generated. It still has to be verified elsewhere. The question in the schools that becomes an active one: at what point do you say it has been verified so that it does



not have to be reverified that I, as a teacher, do not have to reverify it with my youngsters? I really believe that point is never reached in classrooms.

I think of the classroom teacher and the children she works with as being more like a doctor and his patients than anything else. A doctor doesn't use medicines, does not use courses of treatment on the basis of accepting research findings. He uses them experimentally with each patient. My father was a physician. He told me once he thought he killed a man by giving him milk of magnesia. This was the one chance in 4 million that this could happen, whatever the statistic was. This is the parallel and so, as I see it, the teacher, the extension agent, the guy who is responsible for what his clients are subjected to, doesn't accept findings, but he accepts a method, and he uses the method to verify the findings that were made last year. You see, I have to soften your comment a little bit.

Brown: In action research, in involving professional action people how far would you involve them in the tallying of responses if you have 25 or 30 questionnaires?

Foshay: Of course, these things vary. I would involve them in the tallying up to the point where there was a good learning experience for them and beyond that I would turn to clerical help. The thing I think is useful is to divide work up among people so that everyone does a little of it. I think that the consultant in the school situation often has more clerical help available than the teacher does. So particularly clerical jobs, I don't ask anybody to do, I get clerical help to do them.

EXTENSION'S RESPONSIBILITIES UNDER THE  
FEDERAL REPORTS ACT OF 1942

Laurel K. Sabrosky

Prior to 1942, there had been too many surveys and studies and report forms which people had to answer or fill in (especially business firms, and even more especially, the small business firm). These were carried out or sponsored by the United States Government. As a result, in 1942, the Federal Reports Act was passed for two purposes: (1) To reduce the number of times people had to answer questionnaires or fill out report forms; and (2) to improve those which must be used.

The following are the important points included in the Act which apply to Extension Service.

1. Whenever data are collected from 10 or more persons, on identical items, by or sponsored by Federal employees, the plans and report forms must be approved by the Bureau of the Budget.
2. All extension workers (Federal, State and county), except a very few who are on State appointment only, are Federal employees.
3. The Office of the Solicitor General of the U. S. Department of Agriculture was consulted, and his office made the decision that Extension Service was, indeed, covered by the Federal Reports Act of 1942.
4. Because extension workers constantly need to collect data for program planning and program evaluation, a tremendously large number of plans and report forms are developed by them each year. When it became obvious that the Budget Bureau was not staffed to take care of this load of work every year, hearings involving the Budget Bureau, the U. S. Department of Agriculture Clearance Office, and the Federal Extension Service were held in 1949, and it was decided that the following kinds of study plans and report forms would be granted general waiver of clearance, and, therefore, would not require review by the Budget Bureau:
  - a. Those developed by county extension workers for their own program planning and evaluation, as long as the data are not collected from business firms.
  - b. Those developed by, sponsored, by, or participated in, by State extension workers for their own program development and evaluation, as long as:
    - (1) The data are not collected from business firms.
    - (2) The data collected are not similar in nature to that collected by other agencies who have been given the responsibility for collecting the data.



5. HOWEVER, certain types of study plans and report forms must be submitted for review, and, where necessary, to the Budget Bureau for clearance:
  - a. All those where the data are collected from commercial and business firms and industrial organizations.
  - b. All those in which State extension employees participate, or which State extension workers sponsor, which include data which other agencies have been given the responsibility to collect.
6. When the kind of study described in 5b above is submitted, the general plan of review involves:
  - a. Determining first if the agency responsible for the specific data-collection can provide or collect the data.
  - b. If the responsible agency cannot do so, the report forms and plans are reviewed to see that the data will be reliable, and will be usable by the responsible agency as well as by Extension Service.
    - (1) The Federal Extension Service, as well as the U. S. Department of Agriculture Clearance Office, has a responsibility for seeing that study plans and report forms are well designed.

Explanation of "Sponsoring or participating in."

"Sponsoring or participating in" means when Extension Service personnel cooperate with another group or agency, tax-supported or private, on a study that involves the collection of data on identical items from 10 or more persons. Such studies are cooperative and are, therefore, subject to the Federal Reports Act of 1942 if there is: (1) Use of Extension Service funds, or (2) a substantial degree of extension participation in planning, such as determining objectives, designing the questionnaire and sampling methods, and/or in the collection of data.

"Not sponsoring or participating in" means when (1) Extension Service funds are not used, (2) no paper, postage and/or other materials are provided by Extension Service, (3) no papers, letters, or questionnaires with the Cooperative Extension Service letterhead or the frank are used, and (4) no Extension Service employees are involved except in an advisory capacity. In this case, the research project would be the responsibility of the Experiment Station or other agency. If the other agency were a Federal agency, the project would be subject to the Federal Reports Act of 1942, but that agency would be responsible for submitting it for review.

Frequently there is no clear distinction between cooperation involving sponsorship and that which is limited to an advisory capacity. Neither is it always clear as to whether other Federal agencies have been assigned responsibility for collection of the data called for in a given project. Such cases should be presented to this office for determination, in consultation with the Department Clearance Officer, as to need for clearance. Departmental regulations say this: "Cooperative Federal-State projects for collection of data must be submitted for a decision as to whether formal clearance will be required. This decision is based principally on the extent of Federal participation, the area covered, and the nature of the reporting requirements."

## Organizing a State Extension Research Program

### Work Group A

An extension research program is valuable to a State to provide reliable information and analysis upon which decisions can be made in regard to giving direction to new programs, reassuring present programs, improving the efficiency of operation and methods of procedure. Research is especially important at this time of increasing size and scope of the services offered.

The specific program and organization for extension research will vary from State to State to conform to the general organizational patterns of Extension, the college and to land-grant institutions.

However, in establishing an extension research program, some of the following guide lines should be considered:

1. Extension research projects should be those that will be of assistance in the work of the director, supervisors, specialists, and agents.
2. Those who will make use of the findings of the research and those who will be doing the research should be involved in planning the research.
3. The competencies of persons both in and out of Extension who are interested in and can assist with the research should be enlisted.
4. The relation of extension research personnel to others should be such that communications is both possible and encouraged; that they can "work across the board" as a staff service.
5. Determination of research priorities is usually necessary and results from active interest on the part of staff members.
6. Advisory committees have been found useful to determine research projects, to screen project proposals, to plan the details of procedures, to assist in conducting the research projects and to facilitate communication among the groups concerned.
7. Encouragement and support by the administration are needed to assure effective functioning of extension research personnel.
8. Adequate personnel, time, facilities and resources must be allocated to do the job as defined by a particular State. Prior to the beginning of a project a budget of time, money and degree of involvement of consultants, technical people, clerical and field workers should be prepared.
9. For maximum accomplishment it is desirable to have a program of extension research that will maintain balance between projects that have a long range emphasis and those that meet immediate needs.



10. The functions of a State leader of extension research or extension studies include the following:
  - a. Provides leadership for conducting extension research projects in the State.
  - b. Aids and advises other extension and other college personnel in conducting research projects and in evaluating their program.
  - c. Obtains and helps develop information that will assist the director in the improvement of personnel and programs in the State.
  - d. Assists the supervisory and training staff members in obtaining and using the findings of research in personnel training and management.
  - e. Serves as a member of the State extension research committee and functions as the liaison person with the experiment station and other departments which are conducting research and have competencies that can contribute to extension research.
  - f. Cooperates with the Division of Extension Research and Training of the Federal Extension Service, USDA, in coordinating efforts in State, regional and nationwide research projects, plans and policies.
  - g. Establishes and maintains a reference file of research materials.
11. Qualifications of persons serving in extension research. In addition to the academic requirements of the State concerned, the following qualities may be considered:
  - a. Extension background and experience.
  - b. Knowledge of processes of human behavior.
  - c. Research experience in Extension and an aptitude for and interest in research.
  - d. Ability to discriminate between facts and subjective or irrelevant information.
  - e. Ability to plan and organize work and to accomplish the objectives of an investigation.
  - f. Understanding of research design and its application to extension problems.
  - g. Imagination - can see many alternatives in situations.
  - h. Initiative and leadership qualities.
12. Utilize opportunities for continuing inservice training in the field of extension research. It is recognized that few persons will have all suggested qualifications at time of appointment and the gaps need to be filled. Also the research personnel will need to keep abreast of new developments in the field.

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Ways of Getting Findings From Extension and Other  
Social Science Research Used by State  
Extension Staff Members.

Work Group B.

The Problem

Many research projects have been conducted about which nothing was done when the research was completed. Question: "What can be done to make the research pay off in terms of changes in organization or behavior in Extension?"

Suggested Solutions

The work group perceived that action could be taken to promote use of findings at five different stages, assuming that the research program originated within the State. These stages are as follows:

- |       |      |                                    |
|-------|------|------------------------------------|
| Stage | I.   | DECIDING WHAT RESEARCH TO DO.      |
| Stage | II.  | SETTING UP THE RESEARCH PROJECT.   |
| Stage | III. | WHILE THE RESEARCH IS IN PROGRESS. |
| Stage | IV.  | AT COMPLETION OF THE RESEARCH.     |
| Stage | V.   | AFTER THE RESEARCH IS COMPLETED.   |

The work group placed most emphasis on action which could be taken at Stage V, since this applies both to research done by the extension research unit within the State and by others.

Stage I. What to do when -

DECIDING WHAT RESEARCH TO DO

- in order to get findings used.

1. Base research on felt need on part of users. If the felt need is not present, develop it when possible.
  - a. Encourage staff members to contribute ideas for research and use of findings periodically.
    - (1) Individually.
    - (2) In conferences.
    - (3) Through committees.
2. Discuss with users possible changes if findings show them necessary. Discuss possible alternatives and consequences of each.



Stage II. What to do when -

SETTING UP THE RESEARCH PROJECT

- in order to get findings used.

1. Involve personnel affected in relation to their responsibilities in the area studied, ie.
  - (1) Administrative.
  - (2) Supervisory.
  - (3) Action.
  - a. In planning study design.
    - (1) State objectives of program to be studied.
    - (2) Describe processes to be studied (check processes with objectives).
    - (3) State purposes of the research.
    - (4) In other parts of the study design state how the extension workers can make a contribution.
  - b. In making tentative plans for putting findings into use.
    - (1) Include schedule of when study findings may be available.
2. State title in terms of what is expected to be accomplished.

Stage III. What to do -

WHILE THE RESEARCH IS IN PROGRESS

- in order to get findings used.

1. Make periodic reports to all concerned of progress made, emphasizing research processes. Adapt reporting to kind and length of research being carried out.
2. Involve Extension operating personnel in making plans for disseminating and using the research findings when available.
3. Use instruments or processes developed for this research in staff's own work.
4. Involve staff members and lay leaders concerned in responsible roles in the actual research process when appropriate.

Stage IV. What to do -

AT COMPLETION OF THE RESEARCH

- in order to get findings used.

1. Prepare a short summary of findings before final report is completed.
2. Have staff involved in program being studied participate in drawing implications and reporting.

3. Prepare various reports which include applicability and possible uses of findings and which are adapted to different publics. Prepare special abbreviated reports when suitable, such as:
  - (1) Printed leaflets or fliers.
  - (2) Special reports for specified groups.
  - (3) Periodic letters.
4. Study findings to be reported orally including applicability and possible uses of the findings (by a staff member involved in the research when qualified, otherwise by the researcher):
  - a. To all staff.
  - b. To specified groups.
  - c. At workshops.
5. Relate findings from this research to other research findings.
6. Combine complementary research findings in the same field.

Stage V. What to do -

AFTER THE RESEARCH IS COMPLETED - (regardless of where research is done.)  
- in order to get findings used.

1. State staffs responsible for informing FES of studies applicable to extension work.
2. FES responsible for informing State leaders of studies of applicable studies.
3. Leader of studies and/or studies committee responsible for collecting and informing staff members of suitable and applicable research.
4. Obtain administrative support of findings which indicate needed program changes.
5. Obtain training leaders support of program changes which are indicated by research findings.
6. Incorporate findings of research into preservice, graduate, and inservice training for all staff members.
  - a. Emphasize preservice (other courses as well as Extension) and induction training.
  - b. Develop attitude of appreciation for value of research and valid evidence.
  - c. Teach staff how to analyze data.
  - d. Develop an understanding and appreciation of how to solve problems scientifically.



7. Have supervisors support program changes indicated by research findings through:
  - a. Serving as transmitters and teachers.
  - b. Attending regular seminars to discuss research findings of whatever source.
  - c. Participating in reporting use of findings.
  - d. Including program changes in plans of work and implementing them.
8. Have specialists support program changes indicated by research findings through:
  - a. Serving as transmitters and teachers.
  - b. Attending regular seminars to discuss research findings of whatever source.
  - c. Participating in reporting use of findings.
  - d. Including in plans of work program changes and implementation of them.
9. Have agents support program changes indicated by research findings through:
  - a. Serving as transmitters and teachers.
  - b. Attending conferences to discuss research findings of whatever source.
  - c. Participating in reporting use of findings.
  - d. Including in plans of work program changes and implementation of them.
10. Have local people support program changes indicated by research findings through:
  - a. Participation in discussion of applicable research findings when prospective changes are of a major nature.
11. Recognize staff members for changes in programs or methods.
12. Carefully select pilot counties (areas or centers) where county agents and supervisors will try out new ideas and show results. This will provide supervisory staff with knowledge and confidence to enable them to carry ideas farther. It will also provide researcher with favorable climate in which to work out ways to use new ideas.

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## Action Research in Extension Program Projection

### Work Group C

#### The Process

Ideas about studying program projection, along with indications by some State participants of what is being done in this particular field, were reviewed. These reports indicated considerable variability in program projection activities, delineated some of the problems, and revealed a felt need on the part of State as well as Federal people for exploring the possibilities of research in this field. The emphasis in the discussion relative to research was the need for an experimental approach which would include the development of a specially designed program planning model based on principles of effective planning to which research would be closely related for the purpose of testing the model. The planning model would be tested in pilot counties. This would mean that program and research people would be working together. It was emphasized that the research would involve not only the testing of the end product of planning but also an analysis of the planning process.

It was noted that a model for program planning might be applicable to rural development as well as program projection. Associated with this idea was the problem of scope for such an experimental project, namely, whether it should include total county planning or be restricted to extension activities. Another problem of scope that was raised was whether an experimental research project on program projection should be restricted to the planning process or extended to include measurements of the execution of the planning.

Throughout, it was pointed out that well-trained personnel with at least one research person assigned to live in the county in which such a project might be conducted would be a necessity. The importance of administrative understanding of the project and the necessity for freedom in developing the model for program projection were also considered.

These considerations were interpreted to mean that fairly large financial resources must be available, especially if the project should be for 5 years and include research on both planning and execution of plans.

To help organize the thinking of the group, each participant was asked to submit an outline of the steps which would be needed to initiate and conduct such an experiment, with attention to research design and a program planning model. The outlines submitted were different in scope, ranging from emphasis on a planning model based on research experience, through a list of steps involved in developing such a project, to an operational outline of the organization needed to conduct the experiment and the broad design thereof.



Group Decisions or Areas of Agreement

1. The group decided it would continue to explore the proposal for research on program projection. The following States indicated a willingness to participate: Maryland, New York, Ohio, Pennsylvania, Washington, and Wisconsin. It was thought Michigan and Iowa would also be interested.
2. Each interested State agreed to develop a research statement which would include the following:
  - a. Statement of research problem.
  - b. Statement of definition and objectives of program projection.
  - c. Development of a prototype (or model) for program projection based on principles derived from a review of research literature and experience in this area.
  - d. Development of a plan for doing the research would include methods for testing the hypotheses built into the program planning model and in addition methods for studying the situation in order to implement the program planning.
3. Each State would develop a study statement and submit it to the Division of Extension Research and Training which would be responsible for sending copies to participating States. The Division would also be responsible for scheduling a meeting within the next 3 or 4 months to consider further development of this research proposal.
4. The Division of Extension Research and Training would assemble statements and objectives of program projection from different sources and send them to the participating States.
5. Explorations would be made by all participants relative to financial support. In this connection the group generally felt that to conduct acceptable experiments in this area the financial resources must be considerable.

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